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ABSTRACT

This first issue of the new "Pacific Educational Research Journal" offers articles covering diverse subjects and using diverse research methods. The new journal represents a rejuvenation of a previous publication to address educational issues specific to the Pacific region. Ethnic groups specifically addressed include Hawaiians, second-generation Japanese (Nisei), and immigrant Hmong. Topics covered include youth-risk behaviors, core curriculum, reparations for native Hawaiians, and attitudes toward bilingual education. The following articles are included: (1) "Adolescent Health Behaviors in Hawai'i: Curriculum Directions from the 1995 Hawai'i and National Youth Risk Behavior Surveys" (Beth Pateman, Susan M. Saka, and Morris K. Lai); (2) "The Struggle for Core Studies: Miles Carey at McKinley High School in the Territory of Hawai'i" (Eileen H. Tamura); (3) "The Effects of a Simulation on Student Attitudes toward Reparations for Native Hawaiians" (Linda K. Menton and Paul R. Brandon); (4) "Nutrition Background and Practices of Hawai'i Public Elementary Teachers" (Patricia J. Britten, Naomi A. Kanehiro, and Morris K. Lai); and (5) "Hmong Parents: What Do They Think about Bilingual Education?" (Fay H. Shin and Bo V. Lee). (SLD)

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VOLUME 8
NUMBER 1

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PACIFIC EDUCATIONAL RESEARCH JOURNAL

1996
Volume 8
Number 1

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Artist Byron Inouye created the journal logo. He combined Asian and Pacific themes using a design element to create a lotus blossom. The waving pages beneath the blossom symbolize academic scholarship and also call forth the Pacific Ocean. The opening lotus is symbolic of a new beginning for the journal.

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PACIFIC EDUCATIONAL RESEARCH JOURNAL

The *Pacific Educational Research Journal* is published annually and features theoretical, empirical, and applied research with implications for and relevance to education in the Pacific area.

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Editors' Notes

After a six-year hiatus, we have finally produced this Volume 8, Number 1 of the *Pacific Educational Research Journal*. Although it is indeed the eighth volume of the journal, it is also in many senses an inaugural issue. It was back in 1991 that Volume 7 was published, under the editorship of Harold Ayabe, who has since retired. In the ensuing years, when the journal was no longer being published, several colleagues expressed a need for a peer-reviewed research journal that addressed educational issues specifically relevant to the Pacific area. To address this need, the Hawai'i Educational Research Association sponsored a rejuvenation of the journal.

This first issue of the new *Pacific Educational Research Journal* offers an intriguing set of articles covering diverse subjects and using diverse methods. Ethnic groups specifically addressed include Hawaiians, Nisei (second-generation Japanese), and immigrant Hmong. Topics covered include youth-risk behaviors, core curriculum, reparations, nutrition education, and attitudes toward bilingual education.

In the first article, Pateman, Saka, and Lai use weighted data from the national and Hawai'i Youth Risk Behavior Surveys, conducted under the auspices of the Centers for Disease Control and Prevention. By comparing the data from the two groups, the authors have made possible a better understanding of both the local and national results.

Tamura's article on educator Miles Cary is a fine example of a historical piece fitting very nicely in an educational research journal. The historian's approach she took, while certainly different from the methods usually found in educational research, clearly emphasized a high level of rigor and validity that would be impressive by any research standards. We found the extensive use of endnotes particularly worthwhile.

Thanks to Menton and Brandon, we now have some research-based knowledge about affecting students' attitudes toward reparations for native Hawaiians. While the topic is of keen interest to people in Hawai'i, the comparison-group study also enlightens us about possible effects of simulations in general on students' attitudes.

Although the importance of nutrition in our lives has usually been acknowledged, it has not usually been treated accordingly in our schools' curricula. Britten, Kanehiro, and Lai's investigation of the nutrition knowledge, training, beliefs, and practices of elementary teachers could prove conducive to the design and implementation of more effective nutrition education training programs.

Shin and Lee's study showed that Hmong parents strongly support the rationale and principles of bilingual education. Their study extends similar studies done with other ethnic groups.

As is befitting a journal focusing on matters of relevance to the Pacific, we have used diacritical marks (the 'okina or glottal stop and the kahakō or macron) in many of the Hawaiian words; however, as is befitting an academic journal, we have left off the diacritical marks if they had not appeared in original titles or quotations.

The production of this issue has benefited from the enthusiasm and passion of several colleagues. Our grateful thanks go to David Ericson, Cathie Jordan, Gisela Speidel, Katherine Tibbetts, Roy Winstead, and Shuqiang Zhang, who helped with the initial planning for the new *Pacific Educational Research Journal*. Providing useful and wise advice from afar were Russ Endo, Alan Shoho, and Don Mizokawa.

We especially wish to thank those persons who have agreed to serve on the editorial advisory board and as contributing editors. All the reviewers for this issue returned their critiques in a timely manner. We were extremely fortunate to have Associate Editor Sandra Shimabukuro, whose skill and energy into the wee hours of the night made possible the desktop publication of this issue. Byron Inouye designed the logo and cover that artistically combined Asian and Pacific elements in a manner that we found most pleasing to our visual, intellectual, and emotional sentiments. We appreciate the support we received from Arthur King, Jr., Director of Curriculum Research & Development Group, during the publication of this journal.

We learned a great deal during the production of this issue. Much of what we learned, however, must wait for the next issue in order to be used. Nonetheless, we are pleased to present this issue of the *Pacific Educational Research Journal*, and we look forward to the continuing evolution and improvement of the journal in the coming years. We welcome any suggestions.

Mahalo (thank you) and aloha,

Kathleen F. Berg
Morris K. Lai
Editors

Pacific Educational Research Journal
Vol. 8, No. 1, pp. 3–18

Adolescent Health Behaviors in Hawai'i: Curriculum Directions From the 1995 Hawai'i and National Youth Risk Behavior Surveys

Beth Pateman, Susan M. Saka, and **Morris K. Lai**
University of Hawai'i

Adolescent health status affects the capacity of young people to engage in learning opportunities of all kinds. The 1995 Hawai'i and National Youth Risk Behavior Surveys (YRBS) provide a critical basis for comparing the prevalence of health risk behaviors among high school students in Hawai'i and across the United States and a means to dismantle inaccurate stereotypes about adolescents living in different geographical regions. Students in Hawai'i reported fewer health risk behaviors than did students across the U.S. on 13 of the 46 YRBS items reported here, more health risk behaviors on 9 of the items, and similar behaviors on 24 of the items. The YRBS data provide important curricular directions for improving adolescent health through school-based efforts.

Beth Pateman is an assistant professor in the Department of Teacher Education and Curriculum Studies, College of Education, University of Hawai'i. Dr. Pateman helped design the Youth Risk Behavior Survey at the Centers for Disease Control and currently specializes in integrating health education across the curriculum.

Susan M. Saka is an evaluator with the Evaluation Office of the Curriculum Research & Development Group, University of Hawai'i. Ms. Saka is the project director of the 1997 Youth Risk Behavior Survey in Hawai'i.

Morris K. Lai directs the Evaluation Office of the Curriculum Research & Development Group, University of Hawai'i. Dr. Lai is the principal investigator of the 1997 Youth Risk Behavior Survey in Hawai'i.

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Adolescence is a unique period of life during which young people undertake the complex process of making the transition from childhood to adulthood. In addition to the cognitive development with which schools traditionally have been concerned, this period encompasses physical, social, and emotional development and is a time of tremendous change (Berk, 1996). The adolescent years also are a time of increasing health risks. During these years, young people often develop behaviors that place them at risk for serious health problems and premature death (Public Health Service, 1991).

Adolescent health status affects the capacity of young people to engage in learning opportunities of all kinds. To provide optimal experiences across the curriculum, educators need a thorough understanding of the health risks young people face today, which likely are different from the problems many educators encountered as teenagers. Further, educators need current information about the prevalence of behaviors that threaten the health of their students now and into adulthood.

In the Pacific Island state of Hawai'i, Herman M. Aizawa, Superintendent of the Hawai'i Department of Education, described the relationship between health and education by saying,

> Children and adolescents must be healthy in order to learn and they must learn in order to be healthy. . . . Schools play an important role in facilitating the processes by which students acquire appropriate and accurate information about their health, learn decision-making and problem-solving skills and assume increasing responsibility for their own health as they mature. Schools help to ensure that students are aware of the values, beliefs, and attitudes which influence not only their own behavior, but also that of others in the society in which they live, work and play (Hawai'i State Department of Education [DOE], 1995, p. i).

Reinforcing this position, the 1995 report of the National School Health Policies and Programs Study, conducted by the Centers for Disease Control and Prevention (CDC), stated,

> Schools have more influence on the lives of youth than any other social institution except the family. . . . The goals of schools are consistent with the goals of health promotion. Because healthy children learn better than children with health problems, to achieve their educational mission, schools must help address the health needs of students. Furthermore, the underlying responsibility of schools to prepare youth to lead productive lives makes health promotion a central facet of the education mission. . . . School health programs can be an efficient means to prevent health risk behaviors and the problems they cause (Kann et al., 1995, p. 291).

Prerequisite to that efficiency, however, is understanding among educators of adolescents' health risk behaviors, related health problems, and effective education for prevention.

The dominant preventable health problems of adolescents across Hawai'i and the United States fall into two major categories: injuries and violence that kill and disable many young people before they reach age 25, and emerging lifestyle choices that affect their health years later (Public Health Service, 1991). Across the U.S., 72% of all deaths among people ages 5–24 years result from just four causes: motor vehicle crashes (28% of all deaths in this age group), other unintentional injuries (11%), homicide (21%), and suicide (12%) (National Center for Health Statistics, 1996). Substantial morbidity and social problems also result from the approximately one million pregnancies that occur each year among adolescents (National Center for Health Statistics, 1995) and the more than 10 million cases of sexually transmitted diseases (STDs) that occur each year among persons ages 15-29 (CDC, 1991). In contrast, 65% of all deaths and substantial morbidity among adults 25 years of age and older result from three quite different causes, closely related to nutrition and physical activity: heart disease (34% of all deaths in this age group), cancer (24%), and stroke (7%) (Kolbe, Kann, & Collins, 1993).

Youth and adults in Hawai'i demonstrate similar, alarming health problems. Injuries are the leading cause of death for children in Hawai'i after age one, accounting for more than 50% of deaths among children and adolescents in Hawai'i through age 18. The leading causes of injury death for Hawai'i's children are related to motor vehicle incidents, homicides, drownings, and suicides (Hawai'i Department of Health, 1994b).

The pregnancy rate for young adolescents in Hawai'i increased nearly 10% from 1980 to 1993 (Governor's Office of Children and Youth [OCY], 1995), and health officials estimate that 2 of every 100 teenagers in Hawai'i will become pregnant before they graduate from high school (OCY, 1993). In addition, chlamydia rates for males and females of all ages in Hawai'i are among the highest in the nation (CDC, 1995).

During an average year in Hawai'i, 27 young people ages 15–19 die from accidents, homicides, and suicides; 18,367 teenagers smoke cigarettes; and 334 juveniles are arrested for the commission of a violent crime. In addition, 532 public school seniors drop out without completing or getting a diploma. Each day in Hawai'i, there are five births to teenage mothers, four of whom are not married. In addition, 14 youths are arrested for serious crimes, and 12 reports of child abuse are made. Every month, there are two teen deaths from homicide, suicide, or accidents (OCY, 1995).

Serious health problems also have been documented among adults who live in Hawai'i. The Hawai'i Department of Health (1994a) estimated that almost one fourth of adults considered themselves overweight (24.1%), and almost half (46.6%) of women living in Hawai'i were trying to lose weight. One in five (20.4%) were current smokers, and almost half (48.0%) reported having a sedentary lifestyle.

Educators can assist students in dealing with their emerging health problems now and as they approach adulthood through curricular experiences focused on reducing or eliminating critical health risk behaviors. To help educators identify and understand the adolescent health risk behaviors that contribute to the health problems noted above, the Hawai'i Department of Education (DOE) biennially conducts the Youth Risk Behavior Survey (YRBS) with federal support from the Division of Adolescent and School Health, Centers for Disease Control and Prevention. The Hawai'i YRBS has been conducted among a representative sample of high school students in grades 9 through 12 since 1993 through a memorandum of agreement with the Curriculum Research & Development Group (CRDG) at the University of Hawai'i (Hawai'i DOE, 1996). In part, this paper will discuss the results of the most recent YRBS, conducted in 1995.

Nationally representative YRBS data also are available. In addition to supporting state education agencies in conducting the YRBS, CDC conducts independent Youth Risk Behavior Surveys among a nationally representative sample of high school students to provide data on U.S. trends in health-risk behaviors and to provide comparisons with state-specific data on a biennial basis. This Youth Risk Behavior Surveillance System (Kolbe et al., 1993) can inform educators about how high school students' health-risk behaviors increase, decrease, or stay the same over time, locally, and nationally.

This paper has two major purposes. The first is to describe the prevalence of priority health-risk behaviors among adolescents in Hawai'i. The second is to compare health-risk behaviors among students in Hawai'i with those of students across the United States. Important differences among adolescents stem from ethnic and cultural backgrounds (Dacey & Kenny, 1994). Similarly, educators' perceptions about adolescents of diverse ethnic and cultural backgrounds also vary. Those who live on the U.S. mainland may imagine Hawai'i as a tropical island paradise where adolescents balance school and surfing in a sunny, supportive, and carefree environment, far from the problems of big city life. Conversely, those who reside in the Pacific Islands may envision Hawai'i as a too ready source of drugs, such as *ice* and *pakalōlō* (marijuana), and assume that many Hawaiian adolescents are or will become drug users.

This comparison of Youth Risk Behavior Surveys is designed to dismantle inaccurate stereotypes about adolescents living in Hawai'i while building a scientific database for comparison with youth living across the U.S. Our commitment to improving the health and education of adolescents must be informed by such attempts to know and understand the young people with whom we work and the risks they face. Such knowledge and understanding are essential to guide effective curriculum development in our schools.

Method

Participants

The 1995 National and Hawai'i Youth Risk Behavior Surveys were conducted during the spring months among students in grades nine through 12. The National YRBS, conducted by Macro International, contractor to CDC, employed a three-stage cluster sample design to produce a representative sample of high school students across the United States. Primary sampling units (PSUs), consisting of large counties or groups of smaller, adjacent counties, were selected with probability proportional to school enrollment size. At the second sampling stage, schools were selected within PSUs, and in the third stage, classes of a required subject were selected within schools. All students in selected classes were eligible to participate in the survey. Among those selected, 70% of schools and 86% of students participated in the National YRBS for an overall survey response rate of 60% and a sample size of 10,904 students. Several schools and classes in Hawai'i were selected as part of the 1995 National YRBS sample. Sampling procedures for the 1995 National YRBS are described in greater detail elsewhere (Kann et al., 1996).

The 1995 Hawai'i YRBS, conducted separately from the national survey by CRDG, employed a two-stage cluster sample design to produce a representative sample of public school students in grades 9–12 across the state. The first stage sampling frame consisted of all public schools containing any of grades 9–12. Schools were selected with probability proportional to school enrollment size. At the second sampling stage, required English classes in grades 9–12 were randomly selected. All students with a seventh-grade reading level or higher in the selected classes were eligible to participate in the survey. Written parental permission was required for all participants. In Hawai'i, all (100%) of the 22 selected schools and 1,244 (62%) of the 2,021 sampled students participated in the survey for an overall response rate of 62% and a sample size of 1,244 students. Sampling procedures are described in greater detail elsewhere (Hawai'i DOE, 1996).

Instrumentation

The Hawai'i and National Youth Risk Behavior Surveys used the 84-item, multiple-choice Youth Risk Behavior Survey questionnaire, developed by CDC collaboratively with federal and nonfederal scientists, survey research specialists, and representatives from state and local education agencies. The YRBS questions monitor six categories of health-risk behaviors that contribute to leading causes of morbidity and mortality in the United States. These categories include (1) behaviors that contribute to unintentional injuries (such as injuries resulting from motor vehicle crashes) and intentional injuries (such as injuries resulting from weapon use and physical fighting), (2) tobacco use, (3) alcohol and other drug use, (4) sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases (STDs), including human immunodeficiency virus (HIV) infection, (5) unhealthy dietary behaviors, and (6) physical inactivity (Kann et al., 1996). The 1995 questionnaire had a seventh-grade reading level and was designed to be administered within one class period. A detailed account of questionnaire development has been reported elsewhere (Kolbe et al., 1993).

CDC initiated the Youth Risk Behavior Surveillance System in 1990, with nationally representative surveys conducted in 1990, 1991, 1993, and 1995. During the most recent 1995 administration, CDC supported 45 states and 16 cities in conducting separate, local surveys in addition to the national survey conducted separately by CDC (Kann et al., 1996).

Procedure

The 1995 Hawai'i and National Youth Risk Behavior Surveys were administered by trained data collectors. When schools in Hawai'i were drawn in both the state and national samples, schools were surveyed only once by national data collectors, and the results were shared with the Hawai'i DOE.

National data collection procedures were designed to protect students' privacy by allowing anonymous and voluntary participation. The YRBS questionnaire was administered in classrooms during regular class periods. Local parent consent procedures were followed for all students participating in the national survey. Students recorded their responses directly on questionnaire booklets that subsequently were scanned by computer at Westat, Inc., and analyzed by CDC (Kann et al., 1996).

Trained personnel from the DOE and CRDG traveled to schools to administer the Hawai'i YRBS. Only students with written permission from parents were allowed to participate, and all responses were anonymous. The Hawai'i YRBS was administered during spring, 1995, to coincide with the national timetable (Hawai'i DOE, 1996). The completed questionnaires were scanned by Westat, Inc., and analyzed by CDC, in accordance with the procedures used for the national data.

Weighting factors were applied to each student questionnaire in both the Hawai'i and National Youth Risk Behavior Surveys to adjust for nonresponse and for the varying probabilities of selection (Kann et al., 1996). Survey Data Analysis (SUDAAN) was used to compute 95% confidence intervals to determine differences among subgroups of students at the $p < .05$ level (Shah, Barnwell, & Bieler, 1995). In the National YRBS, data were representative of students in grades 9–12 in public and private schools in the 50 states and the District of Columbia (Kann et al., 1996). In Hawai'i, results were representative of all Hawai'i public school students in grades 9–12 (Hawai'i DOE, 1996).

Results

The 1995 National YRBS results were reported by age, grade, sex, and race/ethnicity, including white, black, Hispanic, and other. Because of the wide range of ethnicities in Hawai'i and the difficulties inherent in having students identify multiple ethnicities, additional race/ethnicity data were not collected or reported in the Hawai'i YRBS.

Table 1 presents Hawai'i and National YRBS weighted data for 46 selected items from the Youth Risk Behavior Survey questionnaire. Table 1 also includes 95% confidence intervals for each item and a column indicating how risk behaviors among students in Hawai'i compared to risk behaviors among students across the U.S. Results are reported by the six categories of priority health-risk behaviors identified by CDC. Following the method suggested by CDC, we made specific note of differences between the U.S. and Hawai'i if their corresponding confidence intervals did not overlap; however, it should be noted that such a procedure is not based upon any pooled variance, and, therefore, non-overlapping confidence intervals do not necessarily mean that the significance level was controlled at .05 even though each single confidence interval has been derived at the 95% confidence level.

Students in Hawai'i reported less risk behavior than did students across the U.S. on 13 of the 46 YRBS items reported here. Students in Hawai'i more often reported regular seat-belt use; ever trying to quit smoking; less use of smokeless tobacco during the past 30 days; less alcohol use during the past 30 days; less binge drinking during the past 30 days; less use of inhalants during lifetime; lower rates of sexual intercourse during lifetime; lower rates of multiple sexual partners during lifetime; lower rates of sexual intercourse during the past three months; more fruit consumption; more cooked vegetable consumption; less consumption of french fries and potato chips; and less consumption of cookies, doughnuts, pies, and cakes.

Conversely, students in Hawai'i reported more risk behavior on nine of the 46 survey items reported here. These included less motorcycle-helmet use among riders; less bicycle-helmet use among riders; a higher prevalence of suicide attempts during the past 12 months; more marijuana use before age 13; less condom use among sexually active students; more self-perception as slightly or very overweight; more consumption of meats typically high in fat, such as hamburger, hot dogs, or sausage; less attendance in weekly physical education classes; and less participation in school-sponsored sports.

For the remaining 24 of the 46 items reported here, risk behaviors among students in Hawai'i did not differ statistically from risk behaviors among students across the U.S. Students in Hawai'i reported behaviors similar to students across the U.S. related to injury (riding with a drinking driver) and violence (weapon carrying, fighting). Excepting those noted previously,

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TABLE 1

Comparison of 1995 National and Hawai'i Youth Risk Behavior Survey Results, Weighted Percentages, 95% Confidence Intervals (CI), and Relative Ranking

Health risk behavior	United States %	United States *CI*	Hawai'i %	Hawai'i *CI*	Hawai'i vs. U.S.*
Injury					
Rarely or never used seat belts	21.7	(18.5 - 24.9)	9.3	(6.4 - 12.1)	+
Motorcycle riders who rarely or never wore motorcycle helmet	43.8	(30.3 - 57.2)	67.8	(59.7 - 75.5)	-
Bicycle riders who rarely or never wore bicycle helmet	92.8	(91.3 - 94.4)	96.7	(95.7 - 97.8)	-
Rode with drinking driver, past 30 days	38.8	(34.9 - 42.6)	37.6	(34.2 - 41.0)	0
Carried a weapon, past 30 days	20.0	(18.8 - 21.3)	17.5	(15.6 - 19.4)	0
Had property stolen or damaged on school property, past 30 days	34.9	(32.9 - 36.8)	30.0	(26.4 - 33.5)	0
In physical fight, past 12 months	38.7	(36.4 - 40.9)	33.4	(30.2 - 36.7)	0
Seriously considered suicide, past 12 months	24.1	(22.8 - 25.4)	25.5	(23.4 - 27.7)	0
Made plan for suicide, past 12 months	17.7	(16.2 - 19.1)	20.3	(18.4 - 22.2)	0
Made suicide attempt, past 12 months	8.7	(7.8 - 9.6)	12.7	(11.2 - 14.1)	-
Tobacco Use					
Ever tried cigarettes	71.3	(69.7 - 72.9)	68.8	(64.6 - 73.1)	0
Smoked whole cigarette before age 13	24.9	(22.3 - 27.5)	28.2	(26.0 - 30.4)	0
Smoked, past 30 days	34.8	(32.7 - 37.0)	32.4	(27.8 - 36.9)	0
Ever tried to quit smoking	32.9	(29.2 - 36.5)	49.7	(43.3 - 52.4)	+
Used smokeless tobacco, past 30 days	11.4	(9.6 - 13.1)	4.5	(2.1 - 6.9)	+
Alcohol And Other Drug Use					
Ever drank alcohol	80.4	(78.4 - 82.3)	75.8	(71.7 - 79.9)	0
Tried alcohol before age 13	32.4	(30.0 - 34.7)	33.9	(30.0 - 37.7)	0
Drank alcohol, past 30 days	51.6	(49.3 - 54.0)	40.9	(37.1 - 44.7)	+

TABLE 1 (continued)

Comparison of 1995 National and Hawai'i Youth Risk Behavior Survey Results, Weighted Percentages, 95% Confidence Intervals (CI), and Relative Ranking

Health risk behavior	United States		Hawai'i		Hawai'i vs. U.S.*
	%	*CI*	%	*CI*	
Alcohol And Other Drug Use					
Had 5+ drinks on one or more occasions, past 30 days	32.6	(29.6 - 35.6)	24.0	(20.3 - 27.7)	+
Ever used marijuana	42.4	(39.4 - 45.4)	42.4	(38.1 - 46.7)	0
Tried marijuana before age 13	7.6	(6.4 - 8.7)	14.1	(11.3 - 16.9)	-
Used marijuana, past 30 days	25.3	(23.3 - 27.3)	23.8	(19.9 - 27.7)	0
Ever tried cocaine	7.0	(5.9 - 8.1)	7.9	(5.4 - 10.4)	0
Ever used inhalants	20.3	(18.2 - 22.5)	15.2	(12.2 - 18.1)	+
Used other illegal drugs	16.0	(14.2 - 17.8)	14.7	(11.8 - 17.6)	0
Were offered an illegal drug on school property, past 12 months	32.1	(29.1 - 35.1)	36.0	(32.0 - 40.0)	0
Sexual Behavior					
Taught about HIV/AIDS in school	86.3	(80.3 - 92.2)	91.6	(89.7 - 93.4)	0
Ever had sexual intercourse	53.1	(48.6 - 57.6)	43.8	(39.2 - 48.4)	+
Had 4+ sexual partners	17.8	(15.3 - 20.3)	11.0	(8.8 - 13.3)	+
Had intercourse, past 3 months	37.9	(34.4 - 41.4)	28.9	(24.9 - 32.8)	+
Sexually active students who used condom, last intercourse	54.4	(50.9 - 57.8)	40.9	(36.0 - 45.8)	-
Dietary Behavior					
Described selves as slightly or very overweight	27.6	(26.1 - 29.0)	31.1	(29.6 - 32.5)	-
Trying to lose weight	41.4	(39.7 - 43.0)	43.2	(40.3 - 46.1)	0
Dieted, past 30 days	31.2	(29.9 - 32.6)	31.4	(28.9 - 33.8)	0
Exercised to lose weight, past 30 days	51.0	(49.7 - 52.3)	53.9	(50.5 - 57.3)	0
Ate fruit, yesterday	61.7	(59.0 - 64.4)	68.7	(65.6 - 71.9)	+

TABLE 1 (continued)
Comparison of 1995 National and Hawai'i Youth Risk Behavior Survey Results, Weighted Percentages, 95% Confidence Intervals (CI), and Relative Ranking

Health risk behavior	United States %	United States *CI*	Hawai'i %	Hawai'i *CI*	Hawai'i vs. U.S.*
Dietary Behavior					
Ate cooked vegetables, yesterday	49.6	(47.2 - 51.9)	55.7	(52.7 - 58.7)	+
Ate hamburger, hot dogs, or sausage, yesterday	46.5	(43.0 - 50.0)	55.6	(51.9 - 59.3)	-
Ate french fries or potato chips, yesterday	57.6	(55.1 - 60.1)	50.7	(47.7 - 53.6)	+
Ate cookies, doughnuts, pie, cake, yesterday	63.0	(60.2 - 65.9)	52.1	(49.8 - 54.4)	+
Physical Activity					
Exercised vigorously, 3+ of past 7 days	63.7	(60.4 - 66.9)	61.2	(58.8 - 63.5)	0
Walked or bicycled 30 minutes, 3+ of past 7 days	35.4	(32.1 - 38.8)	41.0	(36.0 - 45.9)	0
Attended PE class once or more in average week	59.6	(48.6 - 70.5)	41.6	(35.1 - 48.1)	-
Active in PE class for 20+ minutes	44.5	(37.8 - 51.2)	35.8	(30.8 - 40.8)	0
On school sports teams, 12 months	50.3	(46.6 - 54.0)	40.8	(36.8 - 44.8)	-
On sports teams outside school, 12 months	36.9	(34.4 - 39.4)	39.9	(37.1 - 42.7)	0

*Hawai'i ranks better than (+), worse than (-), or no different (0) from U.S.

smoking, alcohol, and other drug use behaviors were similar. Weight-loss practices and physical-activity patterns also were comparable.

The Youth Risk Behavior Survey measures or provides evidence for measuring 25 of the National Health Promotion and Disease Prevention Objectives for adolescents, established by the U.S. Public Health Service (Kann et al., 1993). YRBS data indicate that students in Hawai'i fully met only the following four of the 25 objectives.

> *Objective 1.6. Increase to at least 40% the proportion of people aged 6 and older who regularly perform physical activities that enhance and*

maintain muscular strength, muscular endurance, and flexibility. In Hawai'i, 50% of students reported doing stretching exercises on three or more of the past seven days, while 46% did exercises to strengthen or tone their muscles.

Objective 1.9. Increase to at least 50 percent the proportion of school physical education class time that students spend being physically active, preferably engaged in lifetime physical activities. In Hawai'i, 78% of students who attended physical education classes reported spending 20 or more minutes actually exercising or playing sports.

Objective 4.7. Reduce the proportion of high school seniors engaging in recent occasions of heavy drinking of alcoholic beverages to no more than 28% of high school seniors. Hawai'i seniors reported 25% had engaged in recent binge drinking.

Objective 4.11. Reduce to no more than 3 percent the proportion of male high school seniors who use anabolic steroids. Only 1% of Hawai'i high school males reported taking steroids without a doctor's prescription.

Adolescents in Hawai'i met only partially the remaining 19 objectives for adolescent health-risk behaviors. These objectives call for increases in light to moderate physical activity, muscular strength building, and daily physical education and for reductions in tobacco, alcohol, and marijuana use. The objectives further call for decreased sexual activity among adolescents and increased pregnancy and disease prevention measures among adolescents who are sexually active. Adolescents in Hawai'i also need to reduce injurious suicide attempts, physical fighting, and weapon carrying and increase motor vehicle-occupant protection systems usage and motorcycle and bicycle helmet use to fully meet national health objectives.

Discussion

The Youth Risk Behavior Surveys provide an important cross-sectional description of adolescent health-risk behaviors in Hawai'i and across the U.S. Because of the sampling procedures used and the response rates obtained, the data met the statistical criteria for being *weighted* and can be used to make generalizations about the adolescent populations from which the samples were drawn. Comparisons of behaviors can be made within and among adolescent groups.

The data do have a number of limitations. Hawai'i race/ethnicity data were not collected beyond the four categories used in the national survey and, thus, were not reported by race/ethnicity categories commonly used in studies in Hawai'i. The Hawai'i and National Youth Risk Behavior Surveys were school based and do not provide information about out-of-school youth. The Hawai'i data are applicable only to public school students.

The time constraint of completing the questionnaire in one class period limited the information that could be collected in each behavioral area. This time constraint also precluded adding survey questions about students' attitudes or perceptions about why the behaviors occurred. Educators in Hawai'i and across the U.S. must look to existing laws, policies, programs, and cultural norms to make these inferences. Qualitative interviews with adolescents also could provide more in-depth information about the YRBS data for building effective school-based prevention programs.

In the injury area, seat-belt and helmet laws contribute to tremendous variation in use. Accordingly, students in Hawai'i were more consistent users of seat belts but used motorcycle and bicycle helmet less often than students across the U.S. Hawai'i students' behaviors were similar to those among students across the U.S. in other injury-related areas. However, students in Hawai'i said they made more suicide attempts during the past year than students across the U.S. Despite Hawai'i's warm climate and great beauty, the high cost of living and related hopelessness some families feel may contribute to this problem.

Patterns of tobacco, alcohol, and other drug use were largely similar for students in Hawai'i and across the U.S. Use of these substances is alarmingly prevalent among young people, regardless of culture or locale. The finding that Hawai'i students were more likely than students across the U.S. to try marijuana before age 13 points to the relatively easy availability of marijuana in the state.

Strong cultural and family norms within close-knit communities may help explain the lower prevalence of sexual activity among students in Hawai'i. However, from a pregnancy and sexually transmitted disease perspective, less condom use among sexually active students in Hawai'i is of great concern. The cultural and family norms that encourage some students to delay intercourse may "shame" others into being hesitant to obtain or use condoms to protect themselves and their partners from pregnancy or sexually transmitted diseases.

More students in Hawai'i than across the U.S. perceive themselves as overweight. However, students in Hawai'i generally appear to consume healthier diets than do students across the U.S., with the exception of consuming more meats typically high in fat, such as hamburger, hot dogs, or sausage. Those familiar with Hawai'i's dietary habits may mentally add Spam to that list.

Though Hawai'i provides a climate conducive to year-round outdoor activity, students in Hawai'i were no more physically active than students across the U.S. Students in Hawai'i reported less attendance in regular physical education classes at school, perhaps reflecting state educational requirements that make physical education a lower priority than is generally the case across the U.S.

Conclusions

Since 1979, national adolescent health trends have shown significant improvement in areas such as reductions in motor vehicle deaths; alcohol, cigarette, and other drug use; and the sexually transmitted diseases, gonorrhea and syphilis. Overall, mortality in the second decade of life has declined by 13%. However, reductions in unintentional injuries largely have been offset by increases in teenage homicide, while worsening poverty as well as risk-taking behaviors continue to influence the morbidities of teenagers adversely. Violence, suicide, and teenage pregnancy continue to be overwhelming problems for young people (Sells & Blum, 1996).

The school health program could become one of the most efficient means available to improve the health education of people in the United States (Kolbe, 1993). However, in difficult budgetary times, programs related to health and health education often are reduced or eliminated in favor of the "core" subjects of English, mathematics, science, and social studies. Unfortunately, the core subjects, which traditionally focus on preparing students for college or the job market, often do little to provide the critical and immediate health-related information adolescents need to have about themselves and their world.

In addition to strengthening health education courses and school-based health services for students in Hawai'i, the YRBS data provide an important springboard for discussion among adolescents in many curricular areas. For example, what literature, music, and theater might students explore related to increasing violence among youth in our society or the devastating losses young people have experienced from AIDS-related deaths among family and friends? How can teachers of mathematics use these data to help students understand that mathematics is a critical tool for helping people make important life decisions? Further, how do mathematicians create meaningful displays of such data? How do mathematicians determine whether means from two surveys indicate a true difference? What do scientists know about how contagious and chronic diseases become widespread throughout a population? How can those diseases be prevented? What differences might social studies classes note among different regions of the U.S. related to health-risk behaviors among high school students? What cultural differences might explain those behavioral differences? These questions are just the beginning of discussions and projects related to adolescent health that might be generated from the YRBS data.

Though students in Hawai'i report lower health-risk behaviors than students across the U.S. in a number of categories, the health risks that our young people continue to take are major threats to the health of our youth now and as leaders of Hawai'i's future. Parents, schools, departments of education and health, religious organizations, and community agencies of all kinds must join to build on the positive aspects of adolescent behavior in Hawai'i and address aspects needing improvement in ways that are meaningful to young people. The Centers for Disease Control and Prevention (1993) has framed this charge in reminding us that each year, more than 40,000 young people aged 10–24 years die needlessly from preventable causes. The opportunity to save so many young lives cannot be neglected. We must focus on prevention with the same determination that we apply to lifesaving treatment.

Note

For more information on the Hawai'i Youth Risk Behavior Survey, contact the Hawai'i Department of Education, 189 Lunalilo Home Road, 2nd Floor, Honolulu, HI 96825 at (808) 396-2563. For information on the National Youth Risk Behavior Survey, contact the Surveillance Research Section, Surveillance and Evaluation Research Branch, Division of Adolescent and School Health, Centers for Disease Control and Prevention, 4770 Buford Highway, NE, Mailstop K33, Atlanta, GA 30341 at (770) 488-5330.

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The Struggle for Core Studies: Miles Cary at McKinley High School in the Territory of Hawai'i

Eileen H. Tamura
University of Hawai'i

In 1930, Miles Cary initiated core studies, a program that promoted active student leadership and participation in school-wide projects, and combined English and Social Studies into a single two-period course in which students worked collaboratively on research projects that examined community issues critically. Also part of the program was a student-run daily newspaper and a variety of extracurricular activities. The program persisted for twenty years at McKinley High School because of Cary's leadership. A widely respected and admired man who obviously sought to work for the best interests of students, Cary was the program's strongest advocate. Core studies, controversial throughout its existence, ended soon after Cary left the Territory.

Eileen H. Tamura is Director of Social Studies Projects at the Curriculum Research & Development Group, University of Hawai'i. Dr. Tamura is the author of *Americanization, Acculturation, and Ethnic Identity: The Nisei Generation in Hawaii* and co-author of *A History of Hawai'i,* the standard textbook used in secondary schools throughout the state.

During the late nineteenth and early twentieth centuries, industrialization, urbanization, and mass immigration created profound economic and social changes in American society. Among these changes was the dramatic rise in the numbers of youths attending high school. While in 1900 there were fewer than 300,000 high school students, by 1920 there were 2 million and by 1929, well over 3 million students.[1]

As on the U.S. mainland, high school enrollment in Hawai'i skyrocketed during the first three decades of the twentieth century. In 1900 there were 160 students; by 1920 the number climbed to 1,950 and then to 8,457 ten years later.[2] And as on the mainland, a growing number of these students were from immigrant and working-class families.

Such dramatic increases spurred educators in Hawai'i and on the mainland to seek new ways to meet the needs of the diverse student population. This essay focuses on the curriculum reform efforts of a leading Hawai'i educator, Miles Cary. Beginning in 1930 and for two succeeding decades he and like-minded educators strove to establish a secure footing for a program they called core studies. But inherent weaknesses plagued the program. Moreover, its philosophy and objectives threatened those who favored the status quo. As a result, core studies engendered controversy throughout its existence and ended soon after Cary left the Territory.

Even before World War I the changing high school population had led educational reformers across the country to question the notion of mental discipline and the relevance of the classical curriculum. Instead they argued for a child-centered curriculum, learning by doing, and other emerging pedagogical ideas.[3] Schools introduced vocational and technical courses, including agricultural training in rural areas, and broadened their services to include medical examinations, free lunches, and evening classes. William Wirt's school system in Gary, Indiana became the model of this new thrust.[4]

After the war, interest in child-centered teaching and individual creativity grew, and research studies brought greater insights into the process of learning.[5] At the same time, mass secondary schooling spread across the country, and reformers argued that the nineteenth century curriculum was no longer relevant. Too many students, declared these critics, were enrolled in academic, college-preparatory courses, but high schools were no longer select institutions and needed to adapt to their changing student population. Believing that many students were unsuited to the traditional curriculum, and taking their lead from the seven Cardinal Principles of Secondary Education—health, command of fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure, and ethical character—these critics argued that the high failure rate of students demonstrated that high schools were not meeting students' needs. In this context, educators looked for ways to modernize the curriculum.[6]

As on the mainland, Hawai'i's school system expanded after the first world war. To illustrate, in 1920 there were four high schools, one in each of the largest towns of the four main islands, but in 1930 there were ten senior high schools and seventeen junior high schools, and by 1940 there were twelve more schools with senior high divisions. This phenomenal increase was due to the growing student population as well as to a 1920 federal education survey recommendation that the Territory increase substantially the number of secondary schools in the rural areas to make them more accessible to the people.[7]

At the center of the Territory's growing school system stood McKinley, the Territory's oldest, largest, and most prestigious public high school. Considered more rigorous academically during the 1920s and 30s than most private schools, it was a privilege and an honor to teach there.[8] Miles E. Cary was appointed school principal in the fall of 1924, three years after arriving in Hawai'i, and remained in that position for twenty-four years.

Born in Orting, Washington, in 1895, Cary graduated in 1917 from University of Washington's School of Education. There he had absorbed progressive educational ideas such as student-centered and experience-centered learning. After several years as a teacher and principal in his home state, he was recruited by a placement agency to teach in Hawai'i. Arriving in 1921 with his wife Edith, Cary taught for two years at McKinley High, served as Maui High School principal for a year, and then in 1924 returned to McKinley as principal.[9]

During Cary's tenure at McKinley, the school served a largely Asian-American student body. In 1929, for example, the ethnic breakdown of its 2,339 students was as follows: 43 percent Japanese, 27 percent Chinese, 10 percent Part Hawaiians, 10 percent Caucasians, 4 percent Portuguese (categorized separately because they were recruited as plantation workers), and 1 percent Hawaiians.[10]

Cary became McKinley principal at a time when the school's curriculum was moving away from an academic program. Until 1920 the school had offered three curriculum strands—college entrance, general (similar to college entrance), and business. In the ensuing years it experimented with different course offerings, among them manual arts and agriculture. In the fall of 1928 McKinley became a three-year high school that required both a major and a minor and yearly courses in English and history. At the same time the school offered more clubs and extracurricular activities and gave credit for part-time work. In the following year the school placed students in three academic tracks—slow, average, and fast—which resulted in fewer failing grades.[11]

Why these changes? As mentioned earlier, more and more children of immigrant and working-class parents were enrolling in high school. Arguing that many of these students had different needs, the 1920 federal education survey team recommended the inclusion of nonacademic strands in the curriculum. At the same time skyrocketing school costs and the move into white-collar jobs by high school graduates who were children of plantation workers brought on a chorus of protests from business leaders. They argued that the schools were not preparing students for the plantation jobs that needed to be filled.[12]

As a result of this outcry, in 1929 the territorial governor Lawrence M. Judd appointed a commission to study ways to adapt "teaching to fit the local industrial and social needs of [the] territory." The result was the Prosser Report, which recommended that the school system expand its vocational agricultural programs and restrict senior high school and University of Hawai'i expenditures and enrollment. Strong negative reactions from the community, coupled with the fewer plantation jobs available during the Great Depression, prevented these recommendations from being implemented.[13]

It was in this context that Cary proposed a program of studies that included vocational education. Cary believed that his proposal answered the criticisms of business leaders. Yet he also realized that it was potentially threatening to them because it encouraged students to examine community issues and think for themselves.

In the fall of 1930, with the approval of the Department of Public Instruction (DPI) superintendent and the DPI director of research, Cary and volunteer teachers at McKinley High began to implement Cary's program, which they called "core studies." Their enthusiasm and the results of that first year led the DPI Commissioners to give their consent to include the school's entire sophomore class in the program the following year. Each succeeding year included more students so that by September 1933, core studies reached the entire school of three thousand sophomores, juniors, and seniors.[14]

What was core studies at McKinley High? At its heart was a "core" class that combined the subjects of English and social studies. This core studies class served as the homeroom, the basic unit within McKinley High's school government. Students in each unit elected representatives and formed working committees that focused on particular school issues and problems.[15]

The central goal of the core studies class was to encourage students to "participate with increasing effectiveness in determining the conditions in which they live[d] and work[ed]." Supplanting the traditional courses of English and social studies, each core studies class met for two hours a day with the same teacher. At the beginning of the school year—using as guides the DPI course of study framework, a core studies handbook developed by teachers, and students' own interests—students and teachers together determined the personal, school-related, city, territorial, national, and international research topics they would examine that year. Cary believed that high school students should examine issues that were important in their lives and at the same time were socially useful and "rich with connections in many directions." Students worked collaboratively on their projects because Cary believed that learning to cooperate was crucial in a democracy.[16]

While the English-Social Studies class was the basic unit within the core studies program, the program went beyond the classroom. Incorporating some of John Dewey's ideas into his plan, Cary envisioned core studies as a school-wide program in which the school community was structured to encourage participatory decision making. Cary believed that the principal should work with teachers and students to develop the school's basic policies, for in the end, Cary believed, "final authority . . . reside[d] in the democratic process."[17]

Cary implemented this idea by encouraging participation during the earliest stages of brainstorming and planning the McKinley program, as well as during the daily running of the school. Instead of a student government, students, teachers, and principal constituted a school government that together decided school-wide issues. This was the most successful component of the McKinley program.[18]

Within this governing structure, students and faculty formed committees that worked on specific projects. For example, they created a voluntary fund to help pay for medical expenses of students injured in school activities, participated in the hiring of a health director, and revised school rules periodically. Students also worked with local health officials to control the spread of tuberculosis by initiating a school-wide testing program and spreading knowledge about the disease. Cary believed that these activities gave students actual experiences in democratic living.[19] In creating this operating structure, Cary and his faculty established a program in the 1930s similar to that of the Winnetka, Illinois, public schools, accomplishing what in the 1950s the prominent educator Ralph W. Tyler urged other school leaders to do.[20]

McKinley High's newspaper, the *Daily Pinion*. gave students experience in journalism, provided a ready means of communication among students, teachers, and principal, and afforded students a forum in which to voice their opinions on issues of concern to them, even if it meant disagreeing openly with the faculty.[21]

Through the *Daily Pinion*, the school bulletin, and school assemblies, Cary urged students to join extracurricular activities such as dramatics, band, the debate team, and the glee club. He prodded them to consider why they were in school, inspired them to learn and to think for themselves, and challenged them to improve their communities. "Every time he went to the auditorium," recalled Akira Sakima, a McKinley student who later became a state legislator, "he used to walk up and down and give his talk. He was always preaching democracy. Think for yourself." Andrew In, another McKinley student in the 1930s, and later dean of the University of Hawai'i's College of Education, recalled that Cary urged students to be active, contributing members of their communities.[22]

Cary's relationship with students was exceptional. Many valued the respect, dignity, and sense of responsibility he accorded them.[23] An idealist

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concerned about students' moral and spiritual development, Cary often talked about the values of "brotherhood," "responsibility," "honesty," and "democracy." For him, democracy meant equality of opportunity, concern for the common good, independent thinking, and civil rights. He argued that such character education could not be learned didactically but only by daily practice. "The only way children will learn how to play baseball," he reasoned, "is through playing baseball."[24]

Cary was not the first to introduce Dewey's ideas to Hawai'i. In the four years before the islands became an American territory, Henry S. Townsend, inspector general of schools, attempted to expand educational opportunities and instill in teachers progressive educational ideas. He left Hawai'i in 1900, having engendered strong opposition.[25]

Despite Townsend's departure, progressive educational ideas continued to attract the attention of some educators. In 1927, as progressive education was becoming increasingly popular on the mainland, the territorial DPI established the Kawānanakoa Experimental School, based ostensibly on Dewey's philosophy. While this action demonstrated that Cary's ideas were generally acceptable to school officials, they were careful not to threaten the status quo, and partly for that reason, the Kawānanakoa "experiment" did little to change education in Hawai'i. Although the school kept its name for more than a decade, lack of strong leadership and effective teacher training and support made the philosophy little more than empty rhetoric.[26] In this regard the McKinley curriculum experienced greater success.

The program at McKinley resembled core curriculum programs on the mainland, which also integrated two or more subject areas, usually English and social studies, avoided drill work, used more than one class period, included student and teacher planning, encouraged cooperative activities and lifelike learning situations, and provided opportunities for guidance and counseling.[27] Cary, who kept up with current educational trends, was influenced by mainland ideas. In turn, his numerous articles, which appeared in national educational journals, no doubt influenced other educators interested in core studies.

But while Hawai'i's core program focused on high school students, mainland programs spread at the junior high school level. Of the schools responding to a 1949 U.S. Office of Education survey, 11 percent of secondary schools enrolling five hundred or more students reported having a core curriculum. Of these schools, 86 percent of the core courses were offered at the seventh, eighth, and ninth grades, and only 14 percent at the senior high level.[28]

In promoting core studies, Cary was less an original thinker than an inspiring educational leader. By the 1930s he had acquired a reputation among students, teachers, principals, and others in the Territory as a caring and dedicated leader.[29] He served in leadership posts from 1924 to 1948 in the Hawaii Education Association, and community groups and radio talk

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show hosts invited him regularly as a speaker.[30] Even the *Honolulu Advertiser,* which often disagreed with Cary's views, admitted that his "personal popularity in Hawai'i" was "unquestioned." Similarly, the *Star-Bulletin,* another critic of Cary's ideas, recognized him as a "champion" of the youth, and acknowledged that his "enthusiasm" and "energy" were "positive" influences in public education in Hawai'i.[31]

His educational philosophy was part of a broader philosophy that emphasized caring about people. As war between Japan and the United States became imminent, he sympathized with the plight of Japanese immigrants and their children, speaking out against anti-Japanese fervor. In keeping with this point of view, he responded positively when asked to serve as education director at Poston, in Arizona, officially called the Colorado River Relocation Center, one of ten such camps holding Japanese Americans during World War II. Cary later explained that he accepted the position to help "maintain the faith" of those incarcerated.[32]

During his one-year (1942–43) tenure at this camp, located near Parker, Arizona, Cary organized a school system that served about 4,500 students, searched with difficulty for qualified teachers and principals, and led intensive teacher-training programs for his many inexperienced recruits, about half of whom were youths just out of high school.[33] Like other camp school superintendents, Cary faced numerous delays, teacher and staff shortages, poor classroom facilities, insufficient books and materials, and inadequate financial resources.[34]

At Poston Cary initiated core studies classes with study units that attempted to address the war situation in which Japanese Americans found themselves. As at McKinley High School, the success of the program varied, depending on the commitment and abilities of the teachers.[35]

Cary's interest in establishing core studies classes at Poston was in keeping with ideas of educational planners working for the War Relocation Authority, the agency that administered the camps. These planners had recommended core studies and the idea of integrating school and community life, despite the fact that these were unusual communities.[36]

Upon his return to Hawai'i, Cary spoke before community and church groups, at which time he criticized the "race baiting" press, primarily on the west coast, the failure of white Americans to distinguish between militarists in Japan and Issei (Japanese immigrants) and their children in America, and the denial of citizenship to Issei. In response, the *Honolulu Advertiser* called Cary's views "disappointing," and the American Legion urged his suspension from the Department of Public Instruction.[37]

As the foregoing illustrates, Cary had become a controversial figure in the Territory, not only because of core studies, but also because of his public statements. As early as the 1928 New Americans Conference, an annual event from 1927 to 1941 designed to channel Hawai'i's Japanese-American youths into sugar plantation work, Cary declared, "Instead of criticizing our young people for looking for the so-called 'white collar' jobs, we should compliment them for wanting to improve their present state." Unsurprisingly, he was not invited to speak at later conferences.[38]

In keeping with this point of view, Cary strongly supported statehood for Hawai'i, arguing that it would give citizens "the right to have a voice in determining the condition[s] under which [they] live[d]." Those who objected, he warned, harbored "dangerous" and "undemocratic" attitudes. He assessed correctly that those who opposed statehood were in fact afraid of giving the Territory's nonwhite population self-determination.[39]

In light of Cary's public statements on issues of concern in the Territory, as well as on the philosophy behind core studies, it is not surprising that both he and the program he promoted were in dispute. In fact, throughout its existence and especially during the late 1930s until its demise, core studies was a controversial program.[40] Realizing that he had to educate the public about the program, Cary issued press releases, spoke to newspaper reporters, and when invited to speak to groups, often used the opportunity to explain core studies.[41]

Nevertheless, opponents within and without McKinley High "bitterly criticized" the program, one person calling it a "monster."[42] In 1949 the *Honolulu Advertiser* published a six-part series critical of cores studies, written by an unidentified former core teacher. Apparently the paper did not feel obliged to publish an equivalent set supporting the program. The writer admitted that the program, "under certain highly ideal conditions would probably *be* good," but that "such ideal conditions were rarely met." Admitting that there was "a good deal in the core philosophy worth keeping," the teacher concluded that the program helped the academically superior student more than the "average or retarded pupil." But even academically capable students in the program, warned the writer, needed an exceptional teacher who could guide them effectively.[43]

A major criticism was that the program neglected an in-depth study of English, U.S. history, and world history and that it lowered educational standards. The *Honolulu Star-Bulletin* urged its abolition, complaining that too much time was spent on social issues, vocational guidance, and health. It called "unrealistic" the idea that teachers were qualified to teach both English and social studies. The *Honolulu Advertiser* blamed core studies for students' low national test scores and for their shortcomings in mathematics, reading comprehension, and speech.[44]

It would be natural to point to these criticisms as the sole cause of the demise of core studies, for indeed they correctly articulated some of the weaknesses in the program. But the stratified society within which this controversy developed provides another source for the strong negative reaction among certain segments of the community. Because core studies encouraged students to think about issues formerly considered "taboo to the masses," it threatened the Caucasian-dominated power structure. The *Star-*

Bulletin reported that the program was "deliberately designed to help the students think about . . . what is going on about them." Cary was aware of the threat such a program posed to "those in favorable positions." Gladys Feirer, a teacher at McKinley during Cary's tenure as principal, recalled that there were those in the community who objected to Cary's policy of encouraging students to investigate issues of concern to them. As a result, from time to time teachers and other supporters of the program had to defend the program at meetings of the DPI commissioners.[45]

Other educational leaders in the Territory—like DPI superintendent Oren E. Long, who later became territorial governor and after statehood, U.S. Senator, and Benjamin O. Wist, head of the Territorial Normal School—supported Cary's ideas at the same time that they accommodated sugar industry leaders. In contrast, Cary refused to compromise his ideas, arguing for a society in which everyone participated in "decid[ing] basic policies and enjoy[ing] the benefits thereof."[46]

As a result Cary was a controversial educator, and core studies was a controversial program. Cary and the teachers who were committed to the program nevertheless remained undeterred. Writing about the opposition, Cary noted that no critic claimed that the program failed in its goal of helping students learn about and practice democracy.[47]

Cary's encouragement to students to think for themselves—whether or not actually practiced in the classroom—led senator Ben F. Dillingham to introduce a bill in 1951 to abolish the program. "Core study teaching is built around a 'point of view,' and I don't think that is the way to teach a subject like history," declared Dillingham. "Students should not delve into evaluations of history." The *Advertiser* called Dillingham's bill "positive," but others questioned the legislature's decision to get involved in curriculum matters.[48]

Such opposition led to repeated "studies" of the program. In 1939 the University of Hawai'i (UH) president David L. Crawford appointed a committee of UH professors to compare the university performance of McKinley High School graduates with all other high school graduates. The committee examined student grades and academic failures and reported a year later that McKinley graduates did as well as other high school graduates. This conclusion was identical to that of a similar study of mainland schools experimenting with core studies and other curriculum programs in cooperation with the Progressive Education Association. In what came to be called the Eight-Year Study (1933–41), researchers reported that high school graduates of the experimental programs did just as well in college as did graduates of the more traditional curriculum. Hawai'i's distance from the mainland prevented its participation in this study.[49]

In 1944–45 came another study. At the request of the territorial legislature, the American Council on Education sent Edgar Draper and Alice Hayden, two professors from the University of Washington, to the Territory to report

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on Hawai'i's schools. In evaluating the islands' secondary school curriculum, Draper and Hayden concluded that the "principle" underlying core studies was "educationally sound," but that its implementation was "haphazard" and weak. Teachers, they reported, lacked understanding, and principals lacked "the time and educational background to supervise" the classrooms.[50]

A few years later, in 1949, schools superintendent W. Harold Loper appointed a committee of eight DPI administrators, asking them to compare core with non-core students. By then core studies was called the English-Social Studies Program at the suggestion of the DPI commissioners, and the course had lost much of its philosophical base. The committee recommended neither mandating nor abolishing the program. Instead, it said that teachers should be allowed to choose the program in which they could do the best teaching.[51]

In 1955 the Hawai'i branch of the American Association of University Women appointed a forty-nine member committee to conduct yet another study. The committee deplored the lack of drill in "fundamentals" and recommended that core studies be abolished, that teachers be trained in "subject rather than method," that students be grouped by ability, and that automatic promotion be discouraged.[52]

In 1960 critics precipitated a fifth study. This time McKinley principal William Geiger and some of his faculty members undertook a "school self-study project" to evaluate the program. And as in earlier studies, this one found that McKinley students performed as well academically as did students of other Honolulu high schools. By this time the issue was the double-period versus single-period approach to the teaching of English and social studies. The committee reported that the double-period course content was "consistent" with DPI guidelines for teaching social studies. No reference was made in the report to Cary's underlying educational philosophy that had been at the heart of the core studies program.[53]

Core Studies at McKinley High, which both began and ended by acts of the Commissioners of Public Instruction, existed in some form from September 1931 to June 1948, after which its name changed to the English-Social Studies Program. Strongest during the 1930s, its demise began in 1948, as soon as Cary left the islands. Unable to survive without a strong, committed leader, the program became progressively weaker during the 1950s. The commissioners finally abolished the program amidst heated debate, using the rationale that McKinley students did not perform better academically than did students of other schools. No reference was made to the original philosophy underlying core studies.[54]

At its best McKinley's core studies engaged students actively in the learning process, provided opportunities for them to participate in decision making, and stimulated them to examine issues in their lives and in the world around them. Cary challenged the passive, mechanical classroom atmosphere, the practice of having students memorize information bits, and the artificial separation of the disciplines. Moreover, he attempted to ground the curriculum in real-life experiences.

Unlike progressive educational programs on the mainland during the 1930s and 40s, which were concentrated in private schools and in public schools in affluent communities, McKinley High served working-class children, assisted in school-related medical expenses, and offered night classes to students who worked during the day. In these ways they were more like pre-World War I progressive public schools.[55]

Nevertheless, despite Cary's worthy intentions, core studies was a flawed program. An obstacle to its success was the inordinate amount of planning, cooperation, and organization required. During its first year, Cary and his team met on weekends and the following summer developing the program. In succeeding years, teachers met weekly and sometimes more often in work groups. Cary and a committee of teachers prepared a handbook for teachers in 1934, revised it, wrote another one in 1940, and revised that one later.[56] Such an effort was difficult to sustain over a long period of time.

Another weakness resulted from Cary's refusal to limit the program solely to teachers committed to core studies. He refused because he believed that McKinley High needed to be a realistic model for other schools. During the first couple of years, when core studies included only a few classes, teachers volunteered to participate, but as the program spread to the whole school, it included fifty teachers, a number of whom were unenthusiastic.[57] Being nonselective in its faculty made program replication in other schools more feasible, but at the price of weakening the quality of the teaching. A teacher's enthusiasm for and commitment to core studies influenced the time and thought spent preparing for class and for school-wide activities. In addition, the program demanded highly skilled teachers well versed in both English and social studies, who could integrate the two subjects meaningfully. Even enthusiastic supporters admitted that the program's effectiveness varied from teacher to teacher and all too often fell far short of the ideal.[58]

Furthermore, to the extent that McKinley's program used the then popular seven Cardinal Principles of Secondary Education as central curriculum themes, as it claimed it did, and to the extent that the program neglected an in-depth study of both history and English, it leaned toward William H. Kilpatrick's project method and rightfully fell prey to criticisms that it was anti-academic.[59]

As on the mainland, after the initial thrust and enthusiasm of the 1930s, curriculum differences between core and non-core classes in Hawai'i became progressively less substantial. Studies on the mainland in the early 1950s comparing core with non-core students found no differences in personal and social adjustment or academic success. Moreover, as in Hawai'i, lack of teacher training was a key weakness.[60]

Of twenty-three high schools in the Territory, seven adopted core studies in some form, but these schools were weak versions of the McKinley program.[61] It was possible to duplicate McKinley's core studies program only to the extent that a school's principal and teachers committed themselves to the philosophy underlying the program and worked cooperatively to ensure quality teaching. This was difficult in large schools. Additionally, the principal had to communicate effectively with parents and community members.

Core studies persisted as long as it did at McKinley High because of Miles Cary's leadership. Highly respected and admired by students and colleagues, Cary was able to continue the program because of his obvious desire to work for the best interests of students. That he "really cared about these kids" infused everything he did. A likable, quiet, and gentle man, he inspired students and colleagues.[62] In the final analysis, his moral authority was his greatest contribution, the reason he has been revered as one of Hawai'i's most important educators.

That Cary never ascended the educational career ladder in Hawai'i was due to his refusal to compromise his educational philosophy. Furthermore, he was uninterested in administrative positions above that of school principal. Yet he was well qualified. Cecil Dotts, who became DPI Director of Secondary Education in 1946, recalled thinking that Cary's experience, knowledge, and leadership ability made him better suited for the job.[63]

What Cary wanted to do with his twenty-year experience in the field was to become a university professor. In his farewell letter to students, parents, and teachers, he wrote, "A number of my intimate associates have known for some time that I have wanted to work in the college field with young, prospective teachers." As early as 1938, he had explored the possibility of joining mainland universities. He would have been pleased to join the University of Hawai'i Teachers College, but opposition to his appointment prevented it. As one of his many admirers asked, "Why would Miles Cary, who was considered in Hawai'i and also by many educators on the mainland as one of [the Territory's] most capable educators . . . not be accepted as a professor?" Disappointed, Cary left the Territory in 1948 to join the University of Minnesota faculty, publicly admitting to "feelings that should remain unexpressed."[64]

Notes

[1] Figures for 1900 and 1929 (actually 3,300,000 students) from National Educational Association, "Vitalizing the High-School Curriculum," *Research Bulletin* 7:4 (September 1929): 180–81; figures for 1920 from Edward A. Krug, *The Shaping of the American High School, 1920–1941,* v. 2 (Madison: University of Wisconsin Press, 1972), 120.

[2] Hawai'i Territory, Department of Public Instruction, *Biennial Report to the Governor and Legislature* (Honolulu: DPI, 1900), 96, hereafter referred to as

Biennial Report; Biennial Report 1929–30, 157. Figures are for grades nine through twelve. The 1920 figure includes students enrolled at the Normal School, which before 1922 enrolled eighth grade graduates in a four-year program. See *Biennial Report 1924,* 61.

[3] Patricia A. Graham, *Progressive Education from Arcady to Academe: A History of the Progressive Education Association, 1919–1955* (New York: Teachers College Press, 1967), 1–2.

[4] Graham, *Progressive Education,* 2–4; Randolph S. Bourne, *The Gary Schools* (Boston: Houghton Mifflin, 1916); Ronald D. Cohen and Raymond A. Mohl, *The Paradox of Progressive Education: The Gary Plan and Urban Schooling* (Port Washington, NY: Kennikat Press, 1979), 3–9.

[5] Graham, *Progressive Education,* 9–10; Ralph W. Tyler, "The Core Curriculum," *NEA Journal* 42 (1953): 563–65.

[6] National Educational Association, "Vitalizing the High-School Curriculum," 176–77; Krug, *The Shaping of the American High School,* 24–25, 230; Commission on the Reorganization of Secondary Education, *Cardinal Principles of Secondary Education: Bureau of Education Bulletin,* 1918, no. 35 (Washington, DC: GPO, 1918), 10–16.

[7] Hawai'i Territory, Department of Public Instruction, *School Directory* (Honolulu: DPI, 1925–41), passim; U.S. Department of the Interior, Bureau of Education, *Survey of Education in Hawaii*, Bulletin 1920, No. 16 (Washington, DC: GPO, 1920), 212–255. John S. Whitehead, in his forthcoming book, *Completing the Union,* argues against the characterization of territorial Hawai'i as colonial. Whitehead points out that unlike Alaska and other western territories, Hawai'i's economy was not dictated to by distant American companies.

[8] Timmy T. Hirata, interview with author, 30 June 1988, Honolulu; Dai Ho Chun interview, in Keiko Yamamoto, "An Oral History of Miles Cary at McKinley High School," unpublished manuscript, 1979, 15.

[9] Shirley J. Williams, "The Educational Theory and Philosophy of Education of Miles Elwood Cary: Implications for Democracy in a Global Civic Culture," Ph.D. diss., Northern Illinois University, 1991, 6–9, 19–22. Cary received his Ph.D. from Ohio State University in 1937. See *Honolulu Star-Bulletin,* 1 November 1938.

[10] Hawai'i Territory, Department of Public Instruction, "Term Reports, December 1929," Hawai'i State Archives, Honolulu. The proportion of

Japanese-American students was higher in rural and outer-island high schools.

[11] Eiko O. Watanabe, "The McKinley High School Core Program," M.Ed. thesis, University of Hawai'i, 1962, 58–84.

[12] Miles E. Cary, "Purposeful Activities in the McKinley Senior High School, Honolulu," *Education* 53 (September 1932–June 1933): 261–68.

[13] Lawrence M. Judd Papers, Territorial Departments, Public Instruction, "Educational Survey," November–December 1929, Hawai'i State Archives, Honolulu; Hawai'i Territory, Governor's Advisory Committee on Education, *Survey of Schools and Industry* (Honolulu: The Printshop Co., 1931) Section 1, 14–17, Section 2, 72.

[14] Miles E. Cary, "Learning Comes Through Living," *Educational Leadership* 4 (May 1947): 491–92; Beth King Gantt, "Democratic Participation as Method in High School Social Studies," M.A. thesis, University of Hawai'i, 1936, 156–57.

[15] Watanabe, "The McKinley High School Core Program," 126–27.

[16] McKinley High School, *The Core Studies Teachers' Guide,* vol. 1, typescript (Honolulu: McKinley High School, 1941), 4; Cary, "Purposeful Activities," 261; Miles E. Cary, "A Vitalized Curriculum for McKinley High School," M.A. thesis, University of Hawai'i, 1930, 219; Cary, "Learning Comes Through Living," 491.

[17] Cary, "A Vitalized Curriculum," 220; Miles E. Cary, " 'Final Authority' and the Schools," *Educational Administration and Supervision* 33 (1947): 480.

[18] Janet Landgraff interview, in Yamamoto, "An Oral History of Miles Cary," 56; Dai Ho Chun, "A Study of the Personal Problems of McKinley High School Students in Honolulu, Hawai'i with Implications for Curriculum Organization," Ph.D. diss., Ohio State University, 1947, 79–80.

[19] Miles E. Cary, "The Core Studies and Community Activities," *Educational Method* 18 (March 1939): 273–74; Andrew In interview, in Yamamoto, "An Oral History of Miles Cary," 37; Miles E. Cary, "Initiating Creative Curriculum Development," *The North Central Association Quarterly* 23 (April 1949): 346; Cary, "Learning Comes Through Living" 493–94; Gantt, "Democratic Participation as Method" 158; Miles E. Cary, "Educating for Democratic Living," *Hawaii Educational Review* 26: 10 (June 1938): 294.

[20] Arthur Zilversmit, *Changing Schools: Progressive Education Theory and Practice, 1930–1960* (Chicago: University of Chicago Press, 1933), 42–44; Ralph W. Tyler, "The Core Curriculum," *NEA Journal* 42 (December 1953): 565.

[21] Dai Ho Chun interview, 17.

[22] Akira Sakima, interview with Michiko Kodama, 26 January 1984, in Ethnic Studies Oral History Project, University of Hawai'i at Mānoa, *Kalihi: Place of Transition*, vol. 2 (Honolulu: ESOHP, 1984), 370; Andrew In interview, 46; *Daily Pinion*, 1 October 1926, 15 December 1926, 17 May 1927, 22 September 1927, 21 September 1928, 17 December 1931, 10 May 1933.

[23] Dai Ho Chun interview, 16, 18; McKinley High School, *Black and Gold* (Honolulu: McKinley High School, 1947), 7; Williams, "The Educational Theory and Philosophy of Education of Miles Elwood Cary," 106–108.

[24] Miles E. Cary, "Teamwork in the Development of Moral and Spiritual Values," *Hawaii Educational Review* 35 (November–December 1946): 85–86; Williams, "The Educational Theory and Philosophy of Education of Miles Elwood Cary," 127–28. Quote is from Cary, "Core Studies," 272.

[25] Lawrence H. Fuchs, *Hawaii Pono: A Social History* (New York: Harcourt Brace, 1961), 265; Robert E. Potter and Linda L. Logan, *A History of Teacher Education in Hawai'i* (Honolulu: Hawai'i Education Association, 1995), 45–46

[26] Hawai'i Territory, Department of Public Instruction, *The Kawananakoa Experimental School: A Brief Statement of History, Objectives, Method and Curriculum* (Honolulu: DPI, 1929), 6–19; Lida Haggarty, "The Extent of Correlation between Philosophy and Practice in the Rooms of the Kawananakoa Intermediate School," M.Ed. thesis, University of Hawai'i, 1938, 23–34, 65.

[27] Tyler, "The Core Curriculum," 563; Harry H. Giles, S.P. McCutchen, and A.N. Zechiel, *Exploring the Curriculum: The Work of the Thirty Schools from the Viewpoint of Curriculum Consultants* (New York: Harper and Brothers, 1942), 33–34; Wilford M. Aikin, *The Story of the Eight-Year Study* (New York: Harper and Brothers, 1942), 18–19; Harris Harvill, "Origins of the Core Concept," *Social Education* 18 (1954): 162. "Education is Life" was the conference theme of the Department of Superintendence; see Cary, "A Vitalized Curriculum," 215. The title for Cary's Master's thesis, "A Vitalized Curriculum for McKinley High School," was similar to that of an NEA bulletin; see National Education Association, "Vitalizing the High School Curriculum." The word "vitalized" meant a school environment that was like life itself, in which students worked together in constructive activities in

a democratic atmosphere; see Cary, "A Vitalized Curriculum," 5, 154–55.

[28] Tyler, "The Core Curriculum," 563; Grace S. Wright, *Core Curriculum in Public High Schools: An Inquiry into Practices, 1949,* Bulletin 1950, no. 5 (Washington, DC: Office of Education, 1950): 5–6.

[29] Dallas McLaren, interview with author, Honolulu, 2 October 1993; Arthur L. Harris, interview with author, Honolulu, 27 September 1993; Cecil K. Dotts, interview with author, Honolulu, 30 December 1993; *Honolulu Advertiser,* 31 March 1947. McLaren, Harris, and Dotts, former principals in Hawai'i, were Cary's contemporaries.

[30] Williams, "The Educational Theory and Philosophy of Education of Miles Elwood Cary," 163–66; *Honolulu Star-Bulletin,* 1 February 1927, 7 April 1930, 21 September 1937, 12 December 1940, 1 May 1947; *Honolulu Advertiser,* 19 October 1944. That the local newspapers printed articles wishing him happy birthday also shows that he was a well known and well regarded community figure. See, for example, *Honolulu Star-Bulletin,* 1 November 1937, 1 November 1938.

[31] *Honolulu Advertiser,* 24 February 1948; *Honolulu Star-Bulletin,* 21 February 1948. Cary touched many lives in Hawai'i. When he died in Virginia in 1959, memorial services were held in Honolulu, and a scholarship fund was created in his honor. See *Honolulu Star-Bulletin* 22 August 1959, 10 November 1959, 8 December 1959, 10 December 1959; *Honolulu Advertiser,* 11 November 1959.

[32] *Daily Pinion,* 3 March 1941; *Star-Bulletin,* 17 September 1943.

[33] *Star-Bulletin,* 27 May 1942; Arthur L. Harris interview; Dallas McLaren interview; "Teachers' Training Course at Colorado River School," *Official Daily Press Bulletin,* 9 August 1942. School enrollment figures are given in "Poston School Faculty Names Listed," *Official Daily Press Bulletin,* 9 October 1942; and Miles E. Cary, "Annual Report, Poston Schools," 67/14, J2.15, p. 2, The Bancroft Library, University of California, Berkeley. Cary was granted a year's leave of absence from McKinley. See "Dr. Miles Cary Issues Farewell Statement," *Poston Chronicle,* 4 July 1943. Harris and McLaren also served as Poston's principals, and Harris succeeded Cary as education director.

[34] Cary, "Annual Report, Poston Schools," 10–15; Paul Bailey, *City in the Sun: The Japanese Concentration Camp at Poston, Arizona* (Los Angeles: Westernlore Press, 1971), 95; Alexander H. Leighton, *The Governing of Men: General Principles and Recommendations Based on Experience at a Japanese Relocation Camp* (Princeton, NJ: Princeton University Press, 1945), 146–47.

[35] "Suggested Units for Core Studies Class," 67/14, J2.26, The Bancroft Library, University of California, Berkeley; Cary, "Annual Report, Poston Schools," 3; Arthur L. Harris interview; Dallas McLaren interview. According to McLaren, who was a principal at Poston when a new adobe high school was built in 1944, he convinced the student council to name it the Miles E. Cary High School.

[36] Thomas James, *Exile Within: The Schooling of Japanese Americans, 1942–1945* (Cambridge, MA: Harvard University Press, 1987), 39–41.

[37] *Star-Bulletin,* 24 August 1943; 16 October 1943, 19 October 1943; *Honolulu Advertiser,* 30 August 1943

[38] New Americans Conference, *Proceedings of Second Annual Conference* (Honolulu: n.p., 1928), 6.

[39] McKinley High School, *Black and Gold,* 1947, 6; Miles E. Cary, "Intergroup and Interracial Education," *The Bulletin of the National Association of Secondary-School Principals* 32 (March 1948): 39–44; Roger Bell, *Last Among Equals,* 14–15, 44–45.

[40] Arthur L. Harris interview; "The Core Studies Program at McKinley High School," Statement prepared for a forum sponsored by the Republican Club, Honolulu, December 7, 1945, no author, typescript, p. 1. In newspaper articles and editorials from the late 1930s to 1961, "controversial" was a frequently used adjective of core studies.

[41] *Honolulu Star-Bulletin,* 1 February 1927, 7 April 1930, 26 March 1931, 12 December 1940; *Honolulu Advertiser,* 19 October 1944.

[42] Cary, "Learning Comes Through Living," 494; *Honolulu Star-Bulletin,* 26 April 1951.

[43] *Honolulu Advertiser,* 17 November 1949, emphasis in original; 21 November 1949.

[44] Cary, "Learning Comes Through Living," 495; *Honolulu Star-Bulletin,* 28 April 1951; *Honolulu Advertiser,* 2 March 1955.

[45] Taboo quote from Mrs. Smith (no first name given), "The Core Studies," 30 August 1945, typescript, p. 1; *Star Bulletin* 12 February 1940; Cary, "A Vitalized Curriculum," 16; Gladys Feirer interview with B. K. Hyams, 1983, untranscribed, tape 7, Hawaiian Collection, Hamilton Library, University of Hawai'i, Honolulu.

[46] *Honolulu Star-Bulletin,* 12 February 1940; Cecil K. Dotts, interview with Warren Nishimoto, 19 March 1991, Honolulu, in *Public Education in Hawaii: Oral Histories,* vol. 2 (Honolulu: Center for Oral History, University of Hawai'i, 1991), 416; Hubert V. Everly, interview with Michiko Kodama-Nishimoto and Warren Nishimoto, 19 April 1991, Honolulu, *Public Education in Hawaii: Oral Histories,* vol. 1, 263–64. Everly, a former teacher and principal in the territory, was dean of the University of Hawai'i Teachers College from 1956–1980. Everly thought that Long and Wist kept Cary from being fired. One compromise Wist and Long made was to support the English standard schools, which segregated students by their ability to speak Standard English, and which in its earlier years resulted in racial segregation. For a discussion of these schools, see Eileen H. Tamura, *Americanization, Acculturation, and Ethnic Identity: The Nisei Generation in Hawaii* (Urbana, IL: University of Illinois Press, 1984), 107–15, 231, 267 n66; and Judith R. Hughes, "The Demise of the English Standard School System in Hawai'i," *The Hawaiian Journal of History* 27 (1993): 65–89.

[47] Dai Ho Chun interview, 18, 23; Cecil Dotts, interview with author; Cary, "Learning Comes Through Living," 495.

[48] *Honolulu Advertiser* 23 March 1951, 20 April 1951.

[49] McKinley High School, "The English-Social Studies Program: A Report of the Self-Study Committee of McKinley High School," typescript, 1961, Appendix E, 1, Special Collections, Hamilton Library, University of Hawai'i, Honolulu; Williams, "The Educational Theory and Philosophy of Education of Miles Elwood Cary," 148. For a summary of the Eight-Year Study, see Herbert M. Kliebard, *The Struggle for the American Curriculum, 1893–1958* (Boston: Routledge, 1986), 213–27. For details on the study, see Aikin, *The Story of the Eight-Year Study;* Giles, McCutchen, and Zechiel, *Exploring the Curriculum;* Eugene R. Smith and Ralph W. Tyler, *Appraising and Recording Student Progress: Evaluation, Records and Reports in the Thirty Schools* (New York: Harper & Brothers, 1942); Progressive Education Association, *Thirty Schools Tell Their Story* (New York: Harper & Brothers, 1943).

[50] Edgar M. Draper and Alice H. Hayden, *Hawaiian Schools: A Curriculum Survey, 1944–45* (Washington, DC: American Council on Education, 1946), 106–107.

[51] Hawai'i Territory, Department of Public Instruction, "McKinley English-Social Studies Program," 1950, 1 sheet typescript, Special Collections, Hamilton Library, University of Hawai'i, Honolulu; McKinley High School, "The English-Social Studies Program," Appendix E, 2.

[52] *Honolulu Advertiser,* 26 March 1955.

[53] McKinley High School, "The English-Social Studies Program," 7, 23–24.

[54] Watanabe, "The McKinley High School Core Program," 1–2; *Honolulu Star-Bulletin*, 26 January 1961, 24 February 1961; *Honolulu Advertiser,* 26 January 1961. On the mainland, progressive educational ideas were in their prime during the 1930s. Although the 1950s gave birth to a national organization of core teachers, the Progressive Education Association dissolved in 1955, and core studies was in decline. See Krug, *The Shaping of the American High School,* 266–67.

[55] Graham, *Progressive Education from Arcady to Academe,* 8–9, 153–54; Zilversmit, *Changing Schools: Progressive Education Theory and Practice,* 88.

[56] Arthur L. Harris interview; Cary, "Learning Comes Through Living," 492; McKinley High School, *The Core Studies Teachers' Guide;* Watanabe, "The McKinley High School Core Program," 126–27.

[57] Cecil Dotts, interview with author; McKinley High School, *The Core Studies Teachers' Guide,* i.

[58] Dai Ho Chun interview, 18.

[59] Course guides Cary and his faculty developed included the themes of the Cardinal Principles, and Cary stated that the school used these themes as guides. See Cary, "Purposeful Activities," 263; Cary, "Learning Comes Through Living," 492; and Gantt, "Democratic Participation as Method," 157. For a discussion of the differences between Kilpatrick and Dewey, see Zilversmit, *Changing Schools: Progressive Education Theory and Practice,* 14–15.

[60] John M. Mickelson, "What Does Research Say about the Effectiveness of the Core Curriculum?" *School Review* 65 (June 1957): 146–57; Dai Ho Chun interview 19.

[61] Watanabe, "The McKinley High School Core Program," 192. This is my conclusion derived from interviews with Arthur Harris, Cecil Dotts, and Dallas McLaren.

[62] Cecil Dotts, interview with author; Dai Ho Chun interview; Dallas McLaren interview; Arthur Harris interview.

[63] Dai Ho Chun interview, 20, 24; Cecil Dotts, interview with author.

[64] *Daily Pinion,* 19 February 1948; Cecil Dotts, interview with author; *Honolulu Advertiser,* 4 February 1948; letter from Cary to Wist, 8 June 1938, Wist Papers, Box 10, Teachers College, General Correspondence, 1937–38, A–L, University Archives, Hamilton Library, University of Hawai'i, Honolulu; letter from Cary to Wist, 26 July 1938, Wist Papers, Box 10; Dai Ho Chun interview, 20–24. After four years at the University of Minnesota, Cary became director of schools founded by the New York Society for Ethical Culture. From there he joined the University of Tennessee Department of Education, then the University of Virginia faculty of education. He died on 11 August 1959 in Charlottesville, Virginia. See *Honolulu Star-Bulletin,* 7 November 1951, 12 August 1959.

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The Effects of a Simulation on Student Attitudes Toward Reparations for Native Hawaiians

Linda K. Menton and **Paul R. Brandon**
University of Hawai'i

This study examined the extent that participation in a simulation about reparations affected the attitudes of ninth-grade social studies students towards reparations for Native Hawaiians. A survey questionnaire was developed to examine the extent that the simulation affected student attitudes about the fairness of reparations and their commitment to reparations. Data were collected in pre-and posttests of a class that took part in the simulation and a comparison group that did not. There was a statistically significant difference between the simulation group and the comparison group regarding student attitudes about the fairness of reparations. The results on items measuring student commitment to reparations did not show statistically significant pre-post differences on three of the four test items, for either the simulation group or the comparison group. On the fourth item of the survey, which asked if reparations should be granted to Native Hawaiians even if taxes had to be raised for all Hawai'i citizens, the simulation group was less in favor of raising taxes on the posttest indicating these students' commitment to reparations decreased after participating in the simulation.

Linda K. Menton is an associate professor in the Curriculum Research & Development Group, University of Hawai'i. Dr. Menton is co-author of *A History of Hawai'i*, the standard textbook used in secondary schools throughout the state. Her articles have appeared in *The History of Education Quarterly*, *Teaching History*, *The History Teacher*, and *Pacific-Asian Education*.

Paul R. Brandon is an associate professor of educational evaluation in the Curriculum Research & Development Group, University of Hawai'i, where he conducts program evaluations, conducts research, and provides in-service training in evaluation to public school administrators and faculty. His recent research has focused on self-evaluations of site-managed school-project evaluations and on the logic of evaluation.

Games and simulations have been used in education for many years, but they have only been used as major teaching tools since the 1950s. "A simulation is a special type of a game, based upon an abstract, limited model of some real phenomenon, usually a decision-making or conflict-resolution situation, and designed to teach the operation and interaction of principles that operate in the situation" (Clegg, 1991).

Simulations are generally considered a highly effective pedagogical tool. They involve students in inquiry-based, problem-solving activities that integrate content and process. Furthermore, they are motivational and require argumentation and reflection. However, despite their availability at both the elementary and secondary levels, there have been few systematic studies of simulations as a tool in social studies classrooms (Clegg, 1991). In some of the studies that have been done, students using simulations showed greater retention of material over time than those using conventional methods (Randel, Morris, Wetzel, & Whitehill, 1992). Other studies have contradicted this finding, noting little difference in student performance whether simulations or conventional instruction was used. (Dekkers & Donnatti, 1981; Boocock, 1968). However, students have reported more interest in simulation and game activities than in conventional instruction (Randel, Morris, Wetzel, & Whitehill, 1992; Boocock & Schild, 1968). Studies regarding student attitudes as a result of participating in simulations have been more consistent. Dekkers and Donatti (1981) reported that simulations as an instructional strategy are more effective than conventional lectures in forming student attitudes. Livingston and Stoll (1973) reported that student attitudes changed in 8 of the 11 studies on simulation they reviewed. The change was usually toward a more realistic, less idealistic view, and toward a greater approval of the real-life person they role-played in the simulation (Clegg, 1991).

Reparations for Native Hawaiians: The Historical Context

One of the most critical issues in Hawai'i today is that of reparations for Native Hawaiians. Although the subject of reparations has been overshadowed recently by the more inclusive subject of Native Hawaiian sovereignty or self-determination, reparations are and will continue to be an important aspect of sovereignty.

The issue of reparations for Native Hawaiians is rooted in what is now considered the illegal involvement of the American government in the coup that forced the abdication of Queen Lili'uokalani in 1893. Hawai'i was annexed to the United States five years later. As a result of these actions, Native Hawaiians, the indigenous people of the islands, were dispossessed of their land, their culture, including their language, and their sovereign nation.

Reparations are usually defined as the settlement of a claim for monetary compensation. It is the term most often used in regard to the settlement of

Native Hawaiian claims (MacKenzie, 1991), and it is the term that was used throughout the simulation described in this article. Similarly, even though *reparations* usually connotes monetary damages, in this simulation the term included any or all of the following: cash, land, and educational and cultural programs.

The Simulation: A Hearing on Reparations for Native Hawaiians

During the 1980s, Congressional study commissions met in Hawai'i several times. These study commissions held public hearings to consider whether Native Hawaiians should be compensated by the United States government for the loss of their lands, their sovereignty, and to a large extent, their culture, as a result of the late nineteenth-century American takeover of the Kingdom of Hawai'i.

The simulation described in this article was originally written as a culminating activity for a unit in a high school history textbook, *A History of Hawai'i* (Menton & Tamura, 1989; Menton, 1994). It was not designed to convince students that reparations should or should not be paid to Native Hawaiians or to influence their attitudes on the subject. Rather, it was developed to help students synthesize information from the unit they had completed and to provide them with an opportunity to learn how to participate in public discourse on a controversial and often emotionally charged issue.

The simulation took six class periods of approximately 50 minutes each. It was designed for 26 students but could be expanded or contracted, depending on the number of students in the class. Students were divided into two teams, with the same number of students on each team, and assigned to various roles to speak for or against reparations for Native Hawaiians.

The decision as to which team would favor reparations (pro) and which would not (con) was decided by coin toss. In actual public controversies, voters are rarely split so equally on an issue. However, in this instance, the need to accurately simulate the real situation was outweighed by pedagogical and practical considerations: the need for every student to have a speaking part, and the need to structure "fairness" into the simulation by assigning an equal number of students, each assigned an equal amount of work, to both sides.

Students understood that they might be required to defend a position they did not personally agree with. They were urged to defend their assigned position to the best of their ability and were assured that they would be given an opportunity to express their personal views at the end of the simulation.

Role-Playing Groups: Roles and Responsibilities

Students role-played individuals belonging to one of the following groups. They created their own personas for their roles within the confines of their pro- or anti-reparations stance. The groups were as follows:

The study commission (8 participants). The study commission was comprised of four members of Congress, two Republicans and two Democrats. Two were from the U.S. Mainland, and two were from Hawai'i. Each had one staff member to assist with research and questions.

The pro-reparations group (9 participants). This group consisted of three individuals representing various Hawaiian organizations speaking for their members. Others in this group were individuals speaking for themselves in favor of reparations. There were eight students in this group plus a student coordinator assigned to coordinate the testimony of all the speakers.

The anti-reparations group (9 participants). This group consisted of three individuals representing taxpayers in various organizations speaking for their members. Others in this group were individuals speaking for themselves in opposition to reparations. There were eight students in this group plus a student coordinator assigned to coordinate the testimony of all the speakers.

The task of both groups was to prepare testimony for or against the following resolution:

> *A wrong has been committed against the Native Hawaiian people that the federal government is obliged to remedy.*

Preparing Testimony

In order to prepare testimony for the hearing and to anticipate questions the commissioners might ask, or in the case of the commissioners, to prepare intelligent questions to ask at the hearing, students worked in their assigned groups to research and respond to the following questions:

1. Are the Native Hawaiian people entitled to reparations because
   a. representatives of the American government were responsible for the overthrow of the Hawaiian monarchy in 1893?
   b. they lost their land?
   c. they lost their culture and because thousands of Hawaiians died from diseases brought by foreigners, including Americans?
2. Who should get reparations, if anyone, and why?
   a. Should reparations be given to all Native Hawaiians? Why or why not?
   b. Should only Native Hawaiians of 50 percent blood quantum, that is only those that are at least one-half Hawaiian, be entitled to reparations? Why or why not?
3. If reparations were granted, what form should they take?
   a. Should reparations be in the form of money for cultural and educational programs? Why or why not?
   b. Should reparations be in land? Why or why not?
   c. Should reparations be in cash? Why or why not?

d. Are there other ways of granting reparations? Or should the three ideas above be combined?

4. Who should pay for reparations, if any, and why?

Students were given additional written guidelines regarding other tasks that had to be carried out according to a timetable. They also listened to the teacher read examples of sample testimony, pro and con, to give them some models for their own work. In preparing their testimony, they were told to expect to speak for approximately two minutes and to expect to be questioned by the commission for perhaps another minute. Students were urged to practice their testimony within their groups but were cautioned that neither side should hear the other side's testimony before the actual hearing. They were provided with a diagram showing how they should arrange the room for the hearing along with protocols for the hearing.

The Hearing

At the simulated hearing, which took two class periods, students alternated, pro and con, giving their testimony and responding to the commissioners' questions. After all the testimony was heard, a brief period was allowed for both sides to prepare a summary and rebuttal statement and for the commissioners to confer. After final statements, the commissioners voted on whether reparations should be granted by responding pro or con to the statement, "A wrong has been committed against the Native Hawaiian people that the federal government is obliged to remedy." The commissioners then had to respond to the questions and sub-questions listed previously as a means of explaining their votes. They then told those present what recommendation they would make to their colleagues in Congress.

Secret Ballots

After the simulation was completed, the student coordinators distributed secret ballots. Students were told to vote for or against reparations. They were told to vote their personal choice on the secret ballot, even if they had to speak for the opposing view during the simulation. After the ballots were counted and the results posted, the class took part in a debriefing session.

Debriefing

Debriefing is one of the most important aspects of a simulation as it allows students to discuss and evaluate what happened during the simulation. The following questions were discussed:

1. Did the commission's vote and the class vote on the secret ballot match? If so, why do you think this happened? If not, why not?
2. Do you think the commissioners and the class voted on the merits of the issue or were other factors involved? If other factors were involved, what were some of them? Do these factors affect real-life decision-making?

3. How did you react to the statements on reparations pro and con? Did they help you understand the issue better? Do you think listening to people testify at public hearings is a good way for elected officials to learn about issues? Are public hearings a good way to help the general public learn about an issue?
4. What do you think the class as a whole could have done to improve the simulation? If you had to take part in the simulation again, what would you do differently?
5. Write a brief statement, about one page long, beginning with this statement:

   > I agree/disagree that a wrong was committed against the Native Hawaiian people that the federal government is obliged to remedy.

   Give reasons for your opinion. You will not be graded on whether you agree or disagree with the statement but on how well you support your opinion.

Effects of the Simulation on Student Attitudes

As noted above, the research to date has shown that participation in simulations can affect student attitudes. The authors conducted this study to examine the extent to which this simulation affected student attitudes about the fairness of reparations and the extent of their commitment to reparations.

Method

Instrument Development

To examine the extent to which the simulation affected students' attitudes about the fairness of reparations and their commitment to reparations, we developed and pilot-tested a survey for ninth graders at a university laboratory school. Because both ninth-grade social studies classes at the school were to participate in the survey, we pilot tested it in a class of tenth graders and, based on those results, made revisions.

The final version of the survey consisted of two sets of items, the first a scale of student attitudes toward the fairness of reparations for Native Hawaiians. These items were (1) "It is fair to give reparations to Native Hawaiians," (2) "The people of Hawai'i should give reparations to native Hawaiians because it is the right thing to do," (3) "The citizens of Hawai'i should *not* give reparations to Native Hawaiians because they are not the ones responsible for the loss of the Kingdom of Hawai'i in 1893," and (4) "The law should require that Native Hawaiians be given reparations." Students were asked to respond on a four-point Likert scale (1 = *strongly agree*, 2 = *agree*, 3 = *disagree*, 4 = *strongly disagree*).

The second set of items was designed to elicit students' opinions about funding for reparations. These items were intended to examine the effects of the simulation on their commitment to reparations. Answered by checking boxes for *yes* or *no*, these items read as follows: (1) "Native Hawaiians should be given reparations in the form of *money for cultural and educational programs*," (2) "Native Hawaiians should be given reparations in the form of *land*," (3) "Native Hawaiians should be given reparations in the form of *cash*," and (4) "Native Hawaiians should be given reparations even if taxes have to be raised for all of Hawai'i's citizens."

Subjects and Data Collection

The participants in this study were ninth graders enrolled at a laboratory school associated with a large university. The school enrolls about 400 students in grades K through 12. Its admission policies are designed to achieve a wide range of students who are randomly selected from nominations sent in from other public and private schools in the state. Through its yearly admissions, the school maintains an ethnic balance representative of the state's school population. There is also a wide distribution of socioeconomic levels in the school. Students come from families of professional, semiprofessional, clerical, service, technical, skilled, and unskilled workers; in some instances, parents are unemployed. There is also a wide range of academic achievement in each class; however, the school has no special education classes (Berg, 1992).

The subjects in this study were 48 students enrolled in two different sections of a ninth-grade social studies class. The simulation group (N = 25) took part in the simulation described earlier during their regular 50-minute class sessions for two weeks; the comparison group (N = 23) did not take part in the simulation. Both classes were taught by the first author; she was the regular classroom teacher and served as the data collector for this study.

Both groups consisted of students who had been assigned to class sections in a quasi-random manner. To ensure that the groups met the criteria necessary for justifying the use of one of the statistical tests conducted in the study, the students' most recent total-reading stanine scores on the Stanford Achievement Test were collected and grouped into three achievement levels: Level 1 = stanines 1–3, Level 2 = stanines 4–6, and Level 3 = stanines 7–9. (At the time this analysis was conducted, Stanford scores were unavailable for 5 of the 25 simulation-group students and for 3 of the comparison-group students.) The results for the simulation group showed 10% in Level 1, 55% in Level 2, and 35% in Level 3. The results for the comparison group showed 9% in Level 1, 56% in Level 2, and 35% in Level 3. The distributions of prior reading achievement for the two groups then, were virtually identical.

Data were collected in pre- and posttests of the simulation class and the comparison group on the first and last days of the simulation.

Data Analysis

Student attitudes about the fairness of reparations. For the set of four items constituting the fairness scale, item correlations and scale reliability (internal consistency) were calculated. Of the four items, number 3 showed a low correlation with the other three items, probably because the item was stated as a negative. The tenth grade pilot-test students had not found the item confusing, but the ninth grade students apparently did. Therefore, the item was eliminated from the analysis. The internal consistency reliability coefficients for the remaining three items were .69 and .83 for the simulation group pretest and posttest, respectively, and .81 and .86 for the comparison group pretest and posttest, respectively.

The scores for the remaining three items constituting the attitude scale were summed and descriptive statistics were calculated.

To calculate the statistical significance of the difference between groups, an analysis of covariance (ANCOVA), with the pretest as the covariate, was conducted. The simulation-group effect size, showing the differences between pre- and posttest mean scores in standard-deviation units, was also calculated.

Students' commitment to reparations. For each of the four items asking for students' opinions about funding, which served as measures of their commitment to reparations, a chi-square analysis was conducted.

Results

Student Attitudes About the Fairness of Reparations

The results of the ANCOVA performed on the fairness scale, given in Table 1, show a statistically significant posttest difference between the simulation and comparison groups. The simulation group pre-post effect size

TABLE 1
Statistics on Attitude Scale Total Score (Maximum Possible = 12)[a]

Group	Pretest		Posttest		Covariance-adjusted posttest mean
	M	*SD*	*M*	*SD*	
Simulation (N = 25)	7.28	1.07	6.64	2.08	6.80[b]
Comparison (N = 23)	7.78	1.70	8.09	2.13	7.90[b]

[a] The scale used for each item was 1 = *strongly agree*, 2 = *agree*, 3 = *disagree*, 4 = *strongly disagree*.

[b] The difference between these two means was statistically significant at the .05 level.

was .34. Using Lipsey's (1990) criteria for classifying effect sizes, these results show a moderate effect. That is, the simulation had a moderate positive effect on students' opinions about the fairness of providing reparations to Native Hawaiians.

Students' Commitment to Reparations

The results on the items measuring student commitment to reparations, as expressed in their opinions about funding reparations, show no statistically significant pre-post test differences for either group on three of the items (See Table 2). These were the three items that asked for opinions about giving reparations in the form of money for cultural and educational programs, land, or cash. On the fourth item, however, which asked for opinions about providing reparations even if taxes had to be raised for all of Hawai'i's citizens, the results show that the simulation group was *less* in favor of raising taxes after completing the simulation. This indicates that students' commitment to reparations decreased after participating in the simulation.

TABLE 2

Statistics on Items Measuring Student Opinions About Funding for Reparations

Item	Group	Testing period	Yes *N*	Yes %	No *N*	No %
1. Native Hawaiians should be given reparations in the form of *money for cultural and educational programs.*	Simulation	Pre	17	68%	8	32%
		Post	18	72%	7	28%
	Comparison	Pre	18	78%	5	22%
		Post	17	77%	5	23%
2. Native Hawaiians should be given reparations in the form of *land.*	Simulation	Pre	16	64%	9	36%
		Post	18	72%	7	28%
	Comparison	Pre	11	48%	12	52%
		Post	12	55%	10	45%
3. Native Hawaiians should be given reparations in the form of *cash.*	Simulation	Pre	11	44%	14	56%
		Post	10	40%	15	60%
	Comparison	Pre	3	13%	20	87%
		Post	3	13%	20	87%
4. Native Hawaiians should be given reparations even if taxes have to be raised.	Simulation*	Pre	6	24%	19	76%
		Post	1	4%	24	96%
	Comparison	Pre	6	26%	17	74%
		Post	8	35%	15	65%

*Chi-square test of statistical significance: $\chi = 4.15$, *df* = 1, *p* = .04

Discussion

It is evident that participation in the simulation did affect student attitudes positively about the fairness of reparations. However, participation in the simulation also seemed to affect student commitment to reparations negatively.

The items about commitment to reparations, as measured by willingness to pay for funding, go beyond the attitude items about fairness. They state the issue of reparations in financial terms, thereby asking for opinions that might predict future student attitudes more than the items asking about issues of fairness. Thus reparations simulations may help change overall student attitudes but may not increase the likelihood that these students will strongly support reparations if they believe the effect on them personally is too great.

The findings reported here confirm that simulations can be an effective tool for changing student attitudes. However, as Clegg (1991) noted, no longitudinal studies of simulations have been reported. No researchers have reported the effects of simulation on students' decision-making skills in subsequent simulation games or in later real-life experiences. The authors are currently following up with the simulation and comparison groups to ascertain if their attitudes about the fairness of reparations and their commitment to them changed from their ninth- to twelfth-grade years.

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Nutrition Background and Practices of Hawai'i Public School Elementary Teachers

Patricia J. Britten, Naomi A. Kanehiro, and **Morris K. Lai**
University of Hawai'i

We examined the nutrition knowledge, training, beliefs, and practices of a representative sample of Hawai'i public school elementary teachers (N = 324) in order to help educational specialists design and implement more effective training programs for this audience. The teachers' basic nutrition knowledge was high, and they recognized the importance of nutrition in elementary education. Almost all did devote at least some instructional time to nutrition, but for most (65%) this time was less than 10 hours per year. In addition, teachers' confidence for teaching nutrition appeared to be low; most rated their nutrition knowledge as only "fair" (60%), and about half did not feel their training for teaching nutrition was adequate (54%).

Patricia J. Britten is a foods and nutrition specialist with the Department of Food Science and Human Nutrition, College of Tropical Agriculture and Human Resources, University of Hawai'i. Dr. Britten develops outreach programs to improve the nutritional health of the people of Hawai'i.

Naomi A. Kanehiro is an assistant extension agent with the Hawai'i Institute of Tropical Agriculture & Human Resources, University of Hawai'i. Ms. Kanehiro develops and conducts public programs on nutrition.

Morris K. Lai directs the Evaluation Office of the Curriculum Research & Development Group, University of Hawai'i. Dr. Lai was the principal investigator of the Hawai'i nutrition education needs assessments conducted in 1980 and 1990–92.

Nutrition education is widely recognized as an important component of elementary education, but most elementary teachers have a limited background in the subject. Throughout the United States, in-service programs have been designed to provide the assistance elementary teachers may need to present nutrition instruction. In Hawai'i we collected information about the present nutrition knowledge, training, beliefs, and practices of public school elementary teachers. Understanding the status of teachers' backgrounds and practices may help educational specialists design and implement more effective training programs for this audience.

Since 1980, the federal Nutrition Education and Training (NET) Program has provided funds to states to develop and deliver comprehensive nutrition education programs addressing four major functions: student instruction, teacher in-service education, school food services personnel training, and nutrition education resources and curricula (Kalina, Philipps, & Minns, 1989). As part of the original planning process for this program, the Hawai'i State Department of Education (DOE), Office of Instructional Services commissioned the University of Hawai'i's Curriculum Research & Development Group (CRDG) to conduct a needs assessment (Lai & Shimabukuro, 1980). Ten years later CRDG conducted a follow-up needs assessment designed to investigate changes since 1980 and assess current and future needs for nutrition education and training in Hawai'i's schools (Lai et al., 1994). The 1990–92 needs assessment included surveys of students, teachers, parents, school nurses, and school food service managers. This study focuses on elementary teachers and is drawn from information collected for the 1990–92 needs assessment, with comparisons to the 1980 data when appropriate. Although other states have reported similar data at professional conferences, we were not able to locate any such studies in the research literature.

Participants and Methods

The subjects for this study were the 324 Hawai'i elementary teachers who were part of the statewide stratified random sample of teachers surveyed for the 1990–92 NET Program needs assessment (Lai et al., 1994). A sampling design for this overall study was created to replicate, as closely as possible, the sampling design for the 1980 needs assessment. The schools selected for the 1990–92 survey were the same schools that had been selected in 1980, with exceptions only when the school no longer existed or grade levels covered by the school had changed. In those cases, the replacement schools were selected by choosing the school to which students who lived in the former school's geographic area were most likely to be attending now (Lai et al., 1994).

We sent questionnaires to the principals of the 42 selected elementary schools with a request that two teachers each from Kindergarten, Grade 1, Grade 2, Grade 3, and Grade 5 complete the survey (Lai et al., 1994). A total of ten teachers in each school, then, should have been given a survey. Questionnaires were returned from 324 teachers in 41 schools, which represents a 77% response rate.

A wide range of information concerning nutrition knowledge, attitudes, and practices was collected from this statewide sample of elementary teachers. Questions included in the survey were designed to gather essentially the same information that had been obtained in the 1980 needs assessment. However, some revisions were made in questions to reflect changes in the information needed (e.g., updated nutrition knowledge questions) or to meet space limitations. To reduce respondent burden, questionnaires were limited to 60 questions. Three teachers and the evaluation staff reviewed drafts of the teacher questionnaire. We then incorporated their comments and recommendations into the final versions of the instruments (Lai et al., 1994).

Nutrition Knowledge

The needs assessment questionnaire included 24 questions designed to measure nutrition knowledge related to the *Dietary Guidelines for Americans*. Since their introduction in 1980, the *Dietary Guidelines* have served as a blueprint for the nutrition knowledge most individuals need to make healthful food selections. Twenty of the nutrition knowledge questions were selected from two forms of a set of questions designed by IOX Assessment Associates (1988) to measure knowledge about the Dietary Guidelines. These questions were developed by experienced test developers, utilizing guidance from nutrition experts. They were tested with small samples of individuals, revised, and then reviewed by specialists in nutrition education (IOX Assessment Associates, 1988). Several of the questions from this set that were selected for the Hawai'i NET needs assessment were adapted to make the foods mentioned more appropriate to Hawai'i, such as substituting rice for bread. Four additional questions were developed by the Hawai'i NET needs assessment project staff from information in the *Dietary Guidelines for Americans* booklet (Lai et al., 1994; U.S. Departments of Agriculture and Health and Human Services, 1990). These questions were developed to assess knowledge of *Dietary Guidelines* concepts that were not covered in the IOX Assessment Associates questionnaires. The questions selected for this test were used for all of the groups surveyed in the 1990–92 NET needs assessment (students, parents, teachers, school nurses, and school food service managers).

Most elementary teachers were able to identify the correct answer for almost all of the nutrition knowledge questions. Their mean score on the 24-item test was 20.4, with a standard deviation of 2.25. The minimum score was 12, maximum 24. The high average score suggests that these teachers have a good basic knowledge of nutrition. In contrast, the mean score on this

TABLE 1
Nutrition Knowledge Topics and Questions Elementary Teachers Were Most or Least Likely to Answer Correctly

Topic and questions (correct answer)	% correct
Most likely to be answered correctly	
The relationship of diet to health	
Eating a lot of salt may raised a person's chance of getting high blood pressure. (true)	97
Being overweight raises a person's chance of getting high blood pressure. (true)	97
Eating foods that are high in saturated fat raises a person's chance of getting heart disease. (true)	97
General statements about healthy practices	
Healthy weight management includes exercising regularly. (true)	99
Reading food labels to find out how much fat, sugar, and sodium (salt) it has is healthy. (true)	98
Most people get too little salt in their diets. (false)	97
Some nutritional characteristics of foods	
Eating whole grain foods like brown rice and whole wheat bread adds fiber to the diet. (true)	97
Portuguese sausage is high in fat. (true)	97
Most fruit drinks like fruit punch, guava, and passion orange are low in sugar. (false)	96
Most canned soups are high in sodium. (true)	98
Some nutritional comparisons between foods	
Chicken eaten without its skin has about the same amount of fat as chicken eaten with its skin. (false)	98
Broiled foods have more fat than fried foods. (false)	97
Brown rice has about the same amount of fiber as white rice. (false)	93
Least likely to be answered correctly	
Some nutritional comparisons between foods	
Chicken nuggets are much lower in fat than a hamburger. (false)	56
Fish sticks are usually low in fat. (false)	62
Honey has fewer calories than sugar. (false)	47
Some nutritional characteristics of foods	
Foods that are low cholesterol are also low fat. (false)	43
Most processed breakfast cereals like corn flakes have a lot of salt. (true)	72
Need for supplements	
Most people should take a multivitamin every day. (false)	56

same test was 15.8 for the sample of parents of fifth grade students. Thirteen of the 24 questions were answered correctly by almost every elementary teacher. Table 1 identifies the topics and specific questions that the elementary teachers were most or least likely to answer correctly.

Training in Nutrition and Sources of Nutrition Information

The 1990–92 needs assessment included questions about attendance at college or university nutrition courses, in-service training sessions in nutrition, and NET-sponsored training sessions. Approximately one third (32%) of the elementary teachers in the sample reported that their degree programs included courses in food and nutritional science or nutrition education methods. Approximately one fourth (28%) reported that they had attended at least one in-service training session in the past five years, but less than 3% reported having attended more than two. Only about 10% reported that they had attended an NET-sponsored training session.

The percentage of elementary teachers whose degree program included a nutrition or nutrition education course was slightly higher in 1990 than in 1980, when 23% (4–6 grade) to 28% (K–3 grade) of the elementary teachers reported that they had such a course (Lai & Shimabukuro, 1980). However, attendance at in-service training sessions on nutrition was slightly lower. About 30% (K–3 grade) to 34% (4–6 grade) of the teachers reported that they had attended training sessions on nutrition in the 1980 survey (Lai & Shimabukuro, 1980), in comparison to 28% in 1990–92. These changes from the 1980 to the 1990–92 survey could be due simply to sample variance. The slight decrease in the teachers reporting in-service training could also be due to a change in the wording of the question. In 1980, teachers were asked about attendance at in-service training *after start of employment*, while in 1990–92, teachers were asked about in-service training in *the past five years*.

About two thirds of the elementary teachers reported that they usually get their nutrition information from mass media sources, such as newspapers, magazines, books, television, and radio (See Table 2). The next most commonly selected category was formal education sources, including classes, lectures, workshops, and demonstrations, but these were selected as the "usual" source of nutrition information by only 17% of the elementary teachers. Health professionals were reported as the usual source by only 11% of the teachers, and other sources such as family, friends, or school resource teachers were seldom selected. The high percentage of elementary teachers who use mass media as a nutrition information source is understandable, given the low percentage who have had formal pre-service or in-service training in nutrition.

Teachers' Confidence in Their Training and Knowledge

Two questions on the questionnaire assessed teachers' confidence in their nutrition training and knowledge. The first question was related to the teachers' perceptions that they had appropriate training in this area. The second asked teachers to rate their own nutrition knowledge. Responses of Hawai'i elementary teachers to the two questions related to confidence are shown in Table 2. The elementary teachers in this sample were about evenly split between those who felt they had appropriate training to teach nutrition (47%) and those who did not believe this (54%). The majority (60%) of the teachers rated their own knowledge of nutrition as *fair*. About one fourth (26%), though, felt that they understood nutrition well and could explain it to others.

In the 1980 needs assessment, 52% of the K–3 grade teachers and 38% of the 4–6 grade teachers felt that they had been properly trained to teach nutrition (Lai & Shimabukuro, 1980). While K–3 and 4–6 grade teachers were not separated in the 1990–92 survey, it appears that the teachers' confidence in their training has not changed markedly in the intervening years.

TABLE 2

Responses of Hawai'i Elementary Teachers to Questions About Their Nutrition Background and Confidence in Their Nutrition Background (N = 324)

Question and response options	% of responses
I usually get nutrition information from	
Newspapers, magazines, books, television, radio	64
Classes, lectures, workshops, demonstrations	17
Friends, family, children	3
Doctors, nurses, nutritionists/dietitians, medical professionals	11
School health specialists or resource teachers	2
Multiple	<1
I have received appropriate training to teach nutrition.	
Strongly disagree	12
Disagree	42
Agree	39
Strongly agree	8
When it comes to the area of nutrition,	
I do not understand the subject	1
I have some idea but I am not sure about the subject	7
I have a fair knowledge about the subject	60
I understand the subject fairly well but cannot explain it to other people	7
I understand the subject well and can explain it to others	26

TABLE 3

Responses of Teachers to Questions About Nutrition and Nutrition Education Beliefs (N = 324)

Question	Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)
The school should teach students how to select foods that are important for good health.	42	56	3	0
There is a direct relationship between nutrition, health, and the quality of life.	81	19	1	0
Students I teach need to learn about nutrition.	54	45	1	0
I set a good example selecting and eating foods that are important for good health.	22	65	12	1
The school cafeteria should be a learning laboratory for nutrition education.	34	58	8	0
School food service managers should participate in food and nutrition education lesson planning with curriculum personnel.	27	60	12	1

Teachers' Beliefs About Nutrition

Several questions on the 1990–92 needs assessment were associated with teachers' beliefs about nutrition and nutrition instruction (See Table 3). All of these questions asked for a response of *strongly agree, agree, disagree,* or *strongly disagree*. Two questions were related to the importance of nutrition as a subject: "Students I teach need to learn about nutrition" and "There is a direct relationship between nutrition, health, and the quality of life." One question was related to the school's responsibility for teaching nutrition: "The school should teach students how to select foods that are important for good health." The variance of the teachers' responses on these questions was small, as might be expected. Almost all teachers provided responses that indicated they felt nutrition was an important subject that should be taught in school, and that nutrition was important for lifelong health.

One additional question on the needs assessment was related to how these teachers viewed their own nutrition practices: "I set a good example selecting and eating foods that are important for good health." Responses to this question were also quite positive, but some teachers (13%) did disagree with this statement.

Teaching Practices

Two questions on the NET needs assessment were related to the time teachers spent teaching nutrition in their classrooms. One asked teachers to report how frequently they taught nutrition. Most elementary teachers reported teaching nutrition on either a *monthly* (37%) or *yearly* (39%) basis. Only 21% of the teachers reported teaching nutrition on a *weekly* basis, and

TABLE 4

Responses of Teachers to Questions About Time Spent Teaching Nutrition and Calculation of Estimated Actual Time Spent Teaching Nutrition (N = 315[a])

Frequency	Time within frequency	Calculation	Hours per year	Number of teachers
Never			0	8
Yearly	1 hour	1 x 1	1	16
	2–3 hours	1 x 2	2	31
	4–5 hours	1 x 4	4	37
	>5 hours	1 x 5	5	39
Monthly	1 hour	9 x 1	9	76
	2–3 hours	9 x 2	18	30
	4–5 hours	9 x 4	36	4
	>5 hours	9 x 5	45	6
Weekly	1 hour	35 x 1	35	63
	2–3 hours	35 x 2	70	3
	4–5 hours		NA	0
	>5 hours		NA	0
Daily	1 hour	176 x 1	176	1[b]
	2–3 hours		NA	0
	4–5 hours		NA	0
	>5 hours		--	1[c]

[a] There were 9 missing responses to one or both questionnaire items.

[b] Response considered to be an outlier.

[c] Response considered to be an error.

less than one percent reported teaching it *daily*. Three percent of the sample reported that they never taught food and nutrition concepts. The results of this survey showed an increase over time in the number of elementary teachers who teach at least some nutrition. In 1980 the percentage of teachers who reported that they did not teach nutrition at all was 19% of the K–3 grade teachers and 38% of the 4–6 grade teachers (Lai & Shimabukuro, 1980).

The second question asked the amount of *time* spent teaching nutrition. Almost one half of the elementary teachers reported spending one hour or less teaching food and nutrition concepts, *within the frequency of teaching nutrition that they had identified*. Twenty percent reported teaching for 2 to 3 hours, 13% for 4 to 5 hours, and 14% for more than 5 hours. Again, 3% reported that they never spend time teaching food and nutrition concepts.

To estimate the amount of time each teacher spent on nutrition over the school year, we developed an algorithm to convert each teacher's responses to these two questions into the hours per year nutrition was taught (Britten, 1996). Conservative estimates of time were made in every case. For example, if a teacher reported teaching *4–5 hours* of nutrition on a *yearly* basis, the time spent teaching was estimated to be 4 hours per year. If a teacher reported teaching *>5 hours* of nutrition on a *monthly* basis, the time spent teaching was estimated to be 5 hours per month for 9 months of school, or 45 hours per year. Teachers' responses to the two questionnaire items and the result of the calculations of hours per year of nutrition instruction are shown in Table 4. We considered the *one hour per day* response to be an outlier and the *five hours per day* response to be an error.

From this calculation, it appears that while very few Hawai'i elementary teachers (3%) *never* teach nutrition, almost two thirds (63%) devote less than 10 instructional hours per school year to nutrition instruction. About one-quarter (24%) of the teachers in this sample reported spending more than 20 hours per year on nutrition instruction.

Integration of Nutrition Education Efforts With School Cafeteria

One goal of the NET program is to use the school cafeteria as a learning laboratory for nutrition education (Kalina et al., 1989). The elementary teachers in this survey were in agreement that this is an appropriate goal; over 90% agree that the cafeteria *should* be a learning laboratory for nutrition education. A large percentage of teachers also reported that they make use of this resource in their nutrition education efforts, with almost 80% involving school breakfast or lunch in the nutrition education efforts at least once a year (See Table 5). Most of these teachers, though, do not involve their school food service manager in planning these activities. Almost 80% reported that they never include the manager in their planning. When asked if managers *should* participate in planning food and nutrition education lessons, though, almost 80% agree that they should participate. About 40% of these teachers

TABLE 5
Responses of Teachers to Questions About the Integration of Nutrition Education With the School Cafeteria (N = 324)

Question and response options	% of responses
How often does your nutrition education efforts involve the school breakfast and/or lunch?	
1–2 times per school year	38
3–5 times per school year	16
More than 5 times per school year	22
Never	21
School does not have a food service program	2
No response	1
How often do you involve your school food service manager in planning nutrition education activities?	
1–2 times per school year	13
3–5 times per school year	1
More than 5 times per school year	1
Never	79
School does not have a food service program	5
No response	1
How often do you eat the school lunch or breakfast?	
Everyday	13
Most of the time (3–4 times each week)	19
Some of the time (1–2 times each week)	28
Hardly ever or never (1–2 times each month)	40
No response	0

also reported that they hardly ever or never ate school lunch or breakfast. We wonder if teachers are able to plan meaningful lessons about school breakfast or lunch without any assistance from the manager and little or no personal exposure to the meals.

Discussion

Hawai'i elementary teachers are expected to address nutrition concepts. The DOE Foundation Program Objectives and the DOE Health Education Framework identify nutrition concepts in student performance expectations (Hawai'i State Department of Education, 1992, 1993). Since teachers are expected to include nutrition instruction in their curricula, professionals responsible for teacher training need to ensure that elementary teachers are well prepared to provide this instruction. Teacher training programs in the

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areas of health and nutrition education should include confidence-building activities in their in-service training opportunities. About one half of the teachers surveyed did not feel their training was adequate in this area, and although their mean score on the knowledge test indicated a good basic knowledge of nutrition, about two thirds felt their nutrition knowledge was only fair or worse. Several authors have suggested potential methods for building the confidence of teachers so that they will be able to teach a subject successfully. One suggestion was to space the in-service training sessions across time, so that teachers can try out what they have learned while the training is ongoing (Contento et al., 1995). Other suggestions were to include opportunities for modeling, guided enactment, and feedback in the training sessions (Paulussen, Kok, & Schaalma, 1994).

The percentage of Hawai'i elementary teachers who have attended in-service training in nutrition has not increased since 1980, despite the implementation of the NET program in the State and the use of NET funds to sponsor teacher training sessions. It would be useful to identify ways in which a larger number of elementary teachers could be reached with nutrition training. Distance education approaches and training via electronic media might be appropriate avenues to explore.

It would also be useful to identify ways to encourage teachers to work more closely with school food service managers, especially in the planning of lessons about school lunch or school breakfast. A large majority of the teachers surveyed felt that these managers should be involved in planning nutrition education efforts, but few teachers included managers in their planning process. Providing successful models from other schools or identifying possible collaborative projects may help teachers to approach managers and plan activities jointly.

The amount of time devoted to nutrition education by elementary teachers has been a concern among nutrition educators (Lytle & Achterberg, 1995). No national organization has made a recommendation concerning the minimum amount of time that should be devoted to nutrition education, but the Joint Committee on National Health Education Standards (1995) has recommended that 50 hours per year be spent on health education in U.S. schools. This recommendation was based on results of the School Health Education Evaluation (SHEE) (Connell, Turner, & Manson, 1985), in which the amount of time spent on health education in order to produce an effect on program-specific (specifically addressed in the curriculum) knowledge, general (determined independently of the curriculum) knowledge, practices, and attitudes was studied. The researchers found that at least 30 hours of classroom instruction time was necessary to produce a "medium" size effect on general health practices, while approximately 20 hours could produce a similarly-sized increase in general knowledge. The definition of a "medium" size effect was an increase from pretest to posttest in the mean score of 50% to 80% of the overall standard deviation. Program-specific knowledge gains of similar size were obtained within 10 to 15 hours of instruction. The effects obtained in knowledge, practices, and attitudes reached stable levels with about 50 hours of classroom instruction. In the area of nutrition, it would appear that from 30 to 50 hours of instruction would be necessary to produce behavioral or attitude changes; this amount of time could also be expected to produce "large" (≥ 80% of the overall standard deviation) changes in general nutrition knowledge.

Teachers who spend less than 10 hours per year on nutrition instruction, as do about two thirds of Hawai'i's elementary teachers, should expect to have an impact on program-specific knowledge alone. If increasing general nutrition knowledge or changing the food-related behaviors of students is a desired result of nutrition instruction, then teachers must be encouraged to increase the amount of instructional time devoted to this subject. Since the amount of instructional time in the school day is fixed, integration of nutrition information into other subjects would seem to be the most feasible way to implement an increase in nutrition instruction. Nutrition can reasonably be integrated into science, mathematics, language arts, and social studies with appropriate lesson materials. These materials exist but should be made more widely available to elementary teachers.

Elementary teachers in Hawai'i recognize the importance of nutrition for lifelong health, agree that nutrition should be part of their curriculum, and are devoting some instructional time to the subject. However, most do not feel confident in their ability to teach nutrition and have not had any in-service training on the subject. Expanding the types of in-service training offered so that more elementary teachers can participate in these training sessions would improve nutrition education efforts throughout Hawai'i.

Note

This study is based on the 1990–92 Hawai'i Nutrition Education and Training Program Needs Assessment, which was conducted by the University of Hawai'i Curriculum Research & Development Group under contract for the Office of Instructional Services, Hawai'i State Department of Education, and on the doctoral dissertation by Patricia Britten, *A Structural Model of Training and Confidence as Predictors of Time Spent Teaching Nutrition by Elementary School Teachers.*

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Hmong Parents: What Do They Think About Bilingual Education?

Fay H. Shin and **Bo V. Lee**
California State University, Stanislaus

This study investigated 100 Hmong parents' attitudes toward bilingual education. The findings of this study show that there is considerable support for the underlying principles of bilingual education. Sixty percent of the parents indicated that they would place their children in a bilingual classroom (where primary language instruction is used), and 32% opposed placing their children in a bilingual classroom.

Fay H. Shin is an assistant professor in the Teacher Education Department at California State University, Stanislaus. Dr. Shin has published research on Hispanic, Korean, and Hmong parents' perceptions of and attitudes toward bilingual education.

Bo V. Lee is working on a master's degree in multilingual education at the California State University, Stanislaus. Mr. Lee teaches elementary school in Stockton, California.

Would Hmong parents want their child to be in a classroom where the primary language is being used for instruction? What are their attitudes toward the principles of bilingual education? The major controversy regarding the education of our English language learners has traditionally centered on the language and methodology used for instruction. Parent involvement in bilingual education has become both a state and a federal mandate and one which is supported by both legislation and court action. However, parents are rarely considered as a major source or foundation for implementing bilingual programs in our public schools.

Immigrant parents have a significant role in their children's learning of a second language. Berryman (1983) found that parents of immigrant children have important roles in second language acquisition, since the first language base that they promote will become the foundation on which the second language structure will be built for their children. Furthermore, parental attitudes about the majority culture also affect children's achievement in the learning of the majority language and of the majority culture. The use of the native language at home by parents and other family members has proven to be crucial in students' development of literacy and preparation for school life (Nieto, 1992). Golub and Prewitt-Diaz (1981) found that teachers were not successfully communicating to parents the values, methods, and outcomes of bilingual education.

Cummins (1989) stated that minority students will be empowered in the school context to the extent that the communities themselves are empowered through their interactions with the school: "When educators involve minority parents as partners in their children's education, parents appear to develop a sense of efficacy that communicates itself to children with positive academic consequences" (p. 62).

The Hmong

Unlike other Asian immigrants, the Hmong (along with other Southeast Asian groups from Cambodia, Laos, and Vietnam) escaped in fear of persecution from the communists and in search of political asylum in 1975. Since then, more than 60,000 Hmong refugees have come to the United States from 1975 to 1986 (Smith, 1988). Over half the California Hmong live in the San Joaquin Valley (Trueba, Cheng, & Ima, 1993). In 1994, Hmong was the third most spoken language in the California public schools (California Department of Education, 1995).

Prior to their arrival in the United States, many of the Hmong were living in rural areas, and many of them did not continue school after their elementary years (Trueba, Cheng, & Ima, 1993). The Hmong have a long-term experience of migration, starting in China over the past one hundred fifty years and extending throughout Indochina prior to their migration to western societies. The Hmong have a rich oral history, but their written language developed in recent years. The French missionaries worked among the Hmong of Laos and northern Thailand throughout the 1950s and 1960s and developed a system of Hmong writing.

Purpose of the Study

The academic success of Hmong children is affected by the attitudes of their parents; therefore, it is important to learn and understand how they perceive education, especially instruction in the Hmong language. This study was an investigation of Hmong parents' perspectives and attitudes toward bilingual education and whether they approved of having their children in a bilingual classroom. The research questions were (1) Do Hmong parents approve of placing their children in a bilingual classroom? and (2) Do Hmong parents agree with the underlying principles and rationale for bilingual education?

This study was limited to Hmong parents who currently have children attending public schools from kindergarten through high school and who live in the cities of Merced, Modesto, and Stockton in California.

Method

Subjects

The sample consisted of 100 Hmong parents in California. The data in Table 1 show the parents' years of residency in the U.S., education, income, and child's primary language.

TABLE 1
Demographics of Sample (N = 100)

Background	%
Residency in U.S. more than 8 years	73
Education of fathers	
Less than high school	60
High school degree	16
College degree	21
Education of mothers	
Less than high school	73
High school degree	14
College degree	8
Income	
Less than $2,000/month	74
Between $2,000–3,000/month	9
More than $3,000/month	5
Child's primary language is Hmong	96

The parents who had more education were more likely to be employed and vice versa. The average number of children per family was five. Ninety-eight percent of the parents indicated that they spoke Hmong or mostly Hmong to their children at home.

Measures

The survey was developed by Shin and Kim (in press) in English and translated into Hmong. Following the primary language translation, a back-translation technique was completed to insure the accuracy of the original translation. The survey consisted of 30 questions including demographic information as well as parents' perceptions and attitudes toward bilingual education. The demographic questions included the length of residency in the United States, parents' educational levels, their socio-economic status, their English proficiency, the language used at home, and whether their child was enrolled in an ESL program. The other questions addressed parents' perceptions and attitudes toward the principles of bilingual education. The survey questions were developed based upon the principles underlying successful bilingual education according to Krashen and Biber (1988) and Cummins (1989).

Procedure

A small number of parents were randomly chosen to examine the survey as a pilot study. The results of the pilot study were used to insure the clarity and comprehensibility of the questions. The data from the pilot study were not included in the final samples.

The survey was distributed through schools, churches, and individually. Some surveys were also read to the parents who were not able to read. A brief letter explaining the importance and the purpose of the study was distributed along with the survey. These surveys were voluntary and anonymous. The return rate was about 40%.

Results

The questions and figures in Table 2 are a few examples and results from the survey. The percentages do not equal 100 because some questions had no response marked.

Discussion

As Table 2 indicates, there were mixed results for the first principle: bilingual education allows children to keep up in subject matter while acquiring English. The majority of the parents agreed that learning subject matter through the first language helps make subject matter study in English

TABLE 2
Survey Results (N = 100)

Rationale for bilingual education	Agree	Disagree	Not sure
a. Bilingual education allows children to keep up in subject matter while acquiring English.	44%	51%	6%
b. Developing literacy in primary language is necessary in order to facilitate the acquisition in English.	52%	30%	14%
c. Learning subject matter through the first language helps make subject matter study in English more comprehensible.	60%	25%	15%
d. High levels of bilingualism can lead to practical, career related advantages.	86%	7%	7%
e. High levels of bilingualism can result in superior cognitive development.	89%	4%	7%
f. It is necessary to keep your child's primary language and culture.	88%	3%	9%
Participation in bilingual education program	**Bilingual yes**	**English only /no**	**Not sure**
If your child is *not* proficient in English, would you prefer them to be enrolled in an English only classroom, or a bilingual classroom where both Hmong and English are used as a medium of instruction (teaching selected subject matter in Hmong)?	60%	32%	8%
If your child *is* proficient in both English and Hmong, would you want them to be enrolled in a classroom where Hmong language is part of the curriculum?	44%	41%	15%

more comprehensible, and developing literacy in the primary language is necessary in order to facilitate the acquisition in English (b and c).

There was very strong support for the last three principles and advantages of bilingualism. An average of 88% of all the parents surveyed agreed that bilingualism can lead to practical, career-related advantages, can result in superior cognitive development, and is necessary to maintain primary language and culture. This shows that parents are very aware and supportive of the advantages of being bilingual and indicates the importance they place on keeping their primary language and culture.

Sixty percent of Hmong parents said they would place their child in a bilingual program if their child was not proficient in English. About a third said they would not place their child in a bilingual classroom.

Conclusions

The findings of this study show that there is considerable support for the underlying principles of bilingual education, and only a minority of Hmong parents actually oppose placing their children in bilingual education programs. They show a strong understanding and belief that bilingualism and primary language maintenance are important and advantageous. Over half of the respondents agreed that literacy transfers.

The results of this study were similar to those of earlier studies (Shin & Gribbons, 1996; Shin & Kim, in press). Those studies involved parents with different ethnic and socio-economic backgrounds (the majority of the Korean parents had higher education and income levels; the Hispanic parents lived in the U.S. more years) and give us more confidence about our conclusions. Those studies showed that there was powerful support for the advantages of bilingualism and maintenance of the primary language culture, and mixed results for the other principles of bilingual education. The data showed parents' support toward placing their children in a bilingual program and for the rationale for bilingual education. In addition, the conclusions of those studies are consistent with other studies (Garza, Desipio, Garcia, Garcia, & Falcon, 1992; Hakuta, 1984; Torres, 1988; Shin & Krashen, in press; Snipper, 1986) which have indicated there is clear support for bilingual education.

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